



Canon  
EF

Canon  
EF

Canon  
EF

Canon  
EF

Canon  
EF

Canon  
EF

Canon  
EF



RELEASE  
BUTTON

WIND LEVER

HOT SHOE

REWIND KNOB--  
PULL UP TO  
OPEN BACK

LENS-LOCKING  
RING--TURN  
COUNTERCLOCKWISE  
TO REMOVE LENS

COUPLING POST  
FOR FLASH RING  
OF SPEEDLITE 133D

GREEN CIRCLE FOR AUTOMATIC-DIAPHRAGM CONTROL

DIAPHRAGM-SETTING RING

LED (LIGHT-EMITTING DIODE)

FLASHES DURING SLOW EXPOSURES AND WHEN YOU DEPRESS BATTERY-TEST BUTTON ON BOTTOM OF CAMERA

DIAPHRAGM-SETTING-RING LOCK BUTTON--DEPRESS TO SELECT AUTOMATIC SETTING

SHUTTER-SPEED DIAL

COUNTER WINDOW

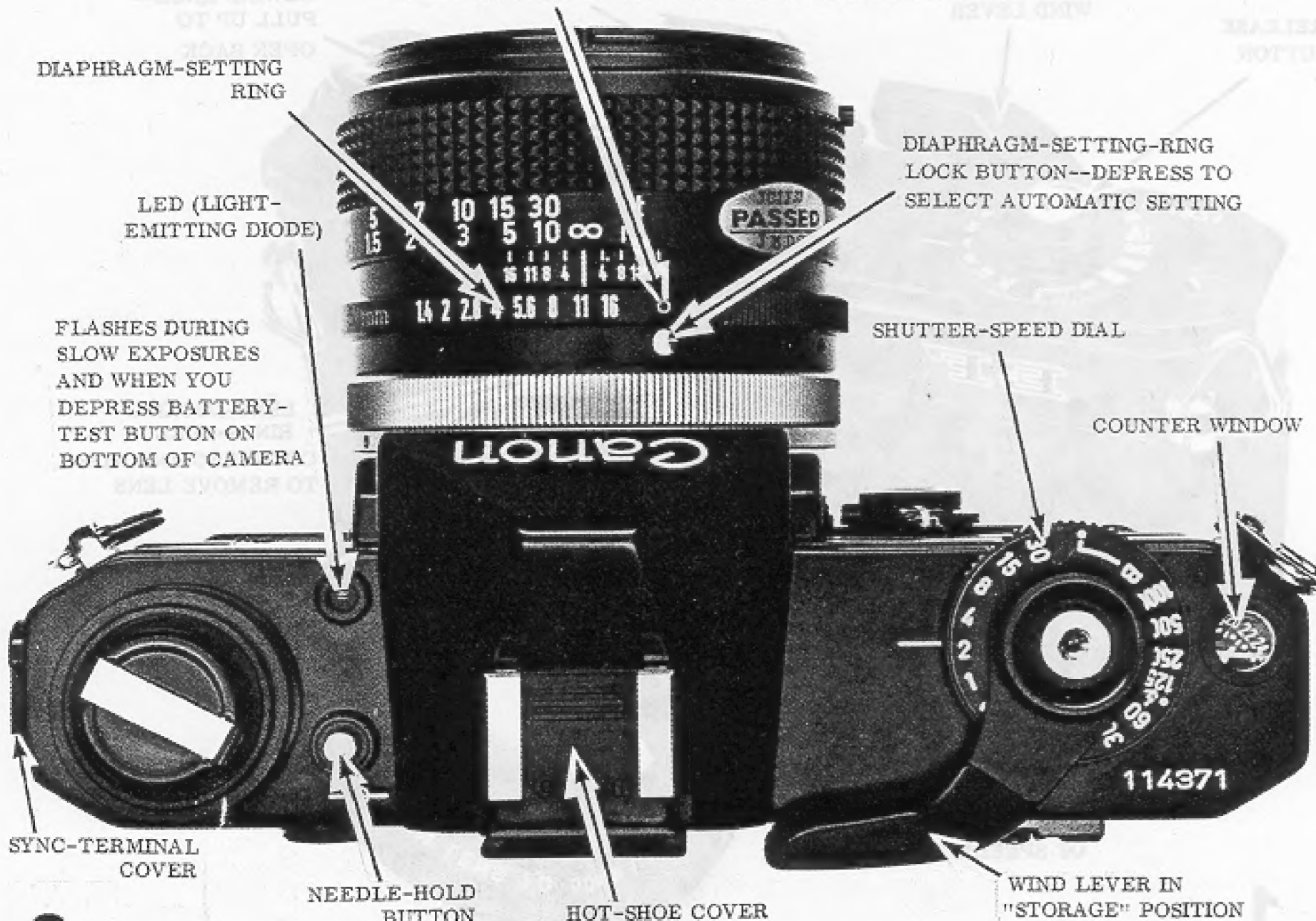
SYNC-TERMINAL COVER

NEEDLE-HOLD BUTTON

HOT-SHOE COVER

WIND LEVER IN "STORAGE" POSITION

2





FILM-SPEED KNOB -- LIFT AND TURN TO SET FILM SPEED

INTENTIONAL DOUBLE-  
EXPOSURE BUTTON

NORMAL

撮影時以外はメイン  
スイッチを OFF にして  
ください。

AFTER USING, TURN  
THE CAMERA OFF.

ON

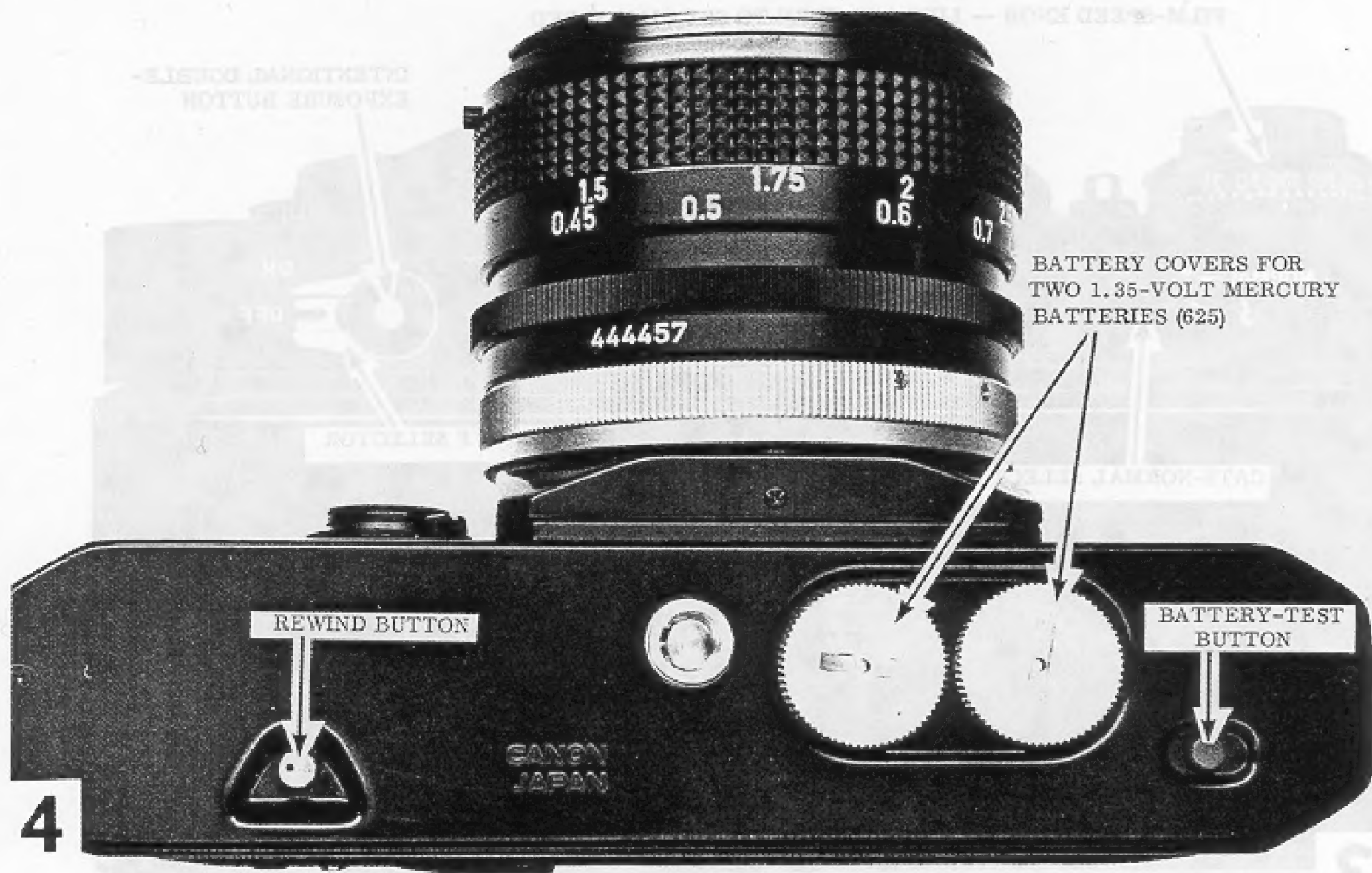
OFF

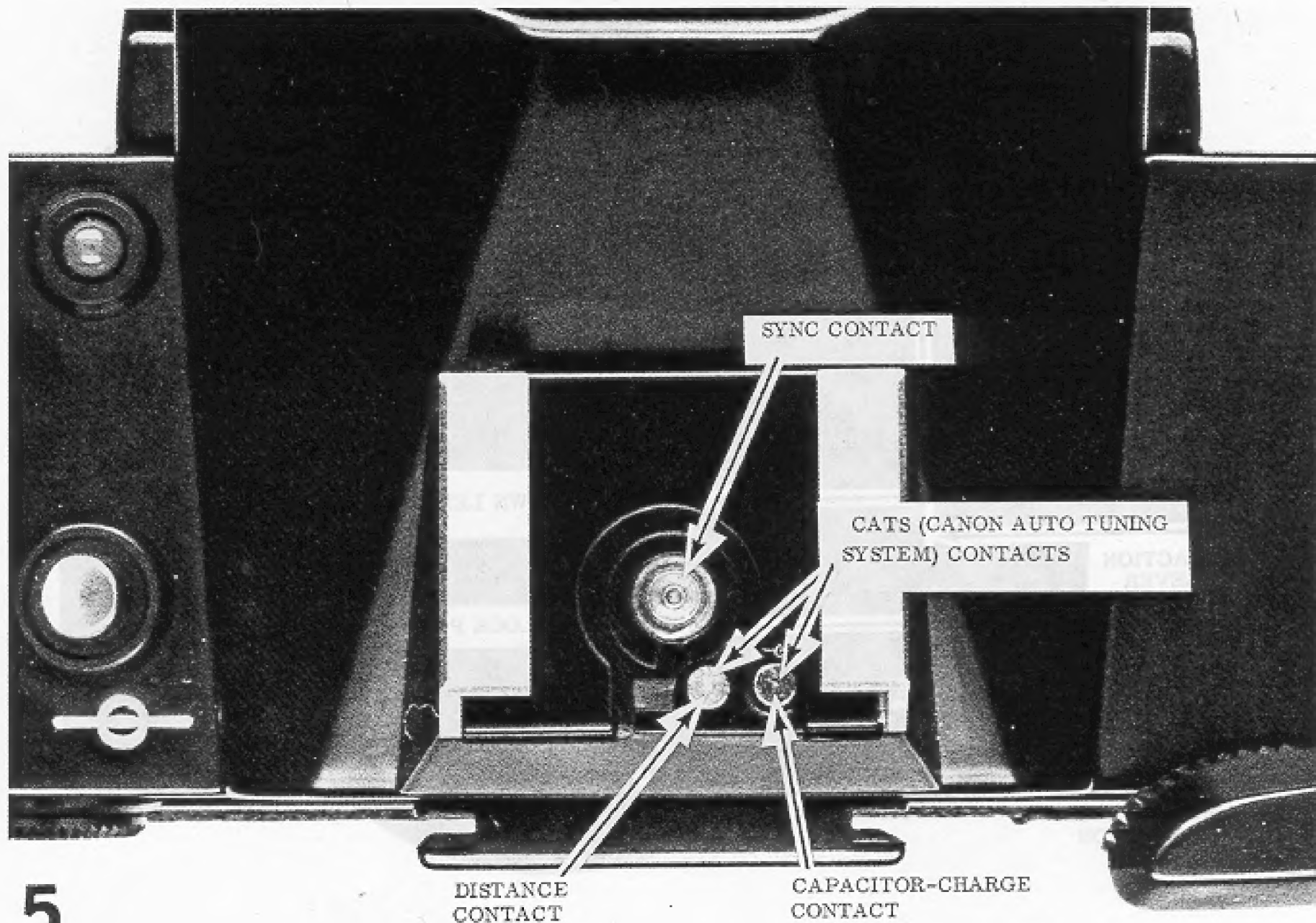
ON-OFF SELECTOR

CATS-NORMAL SELECTOR

3







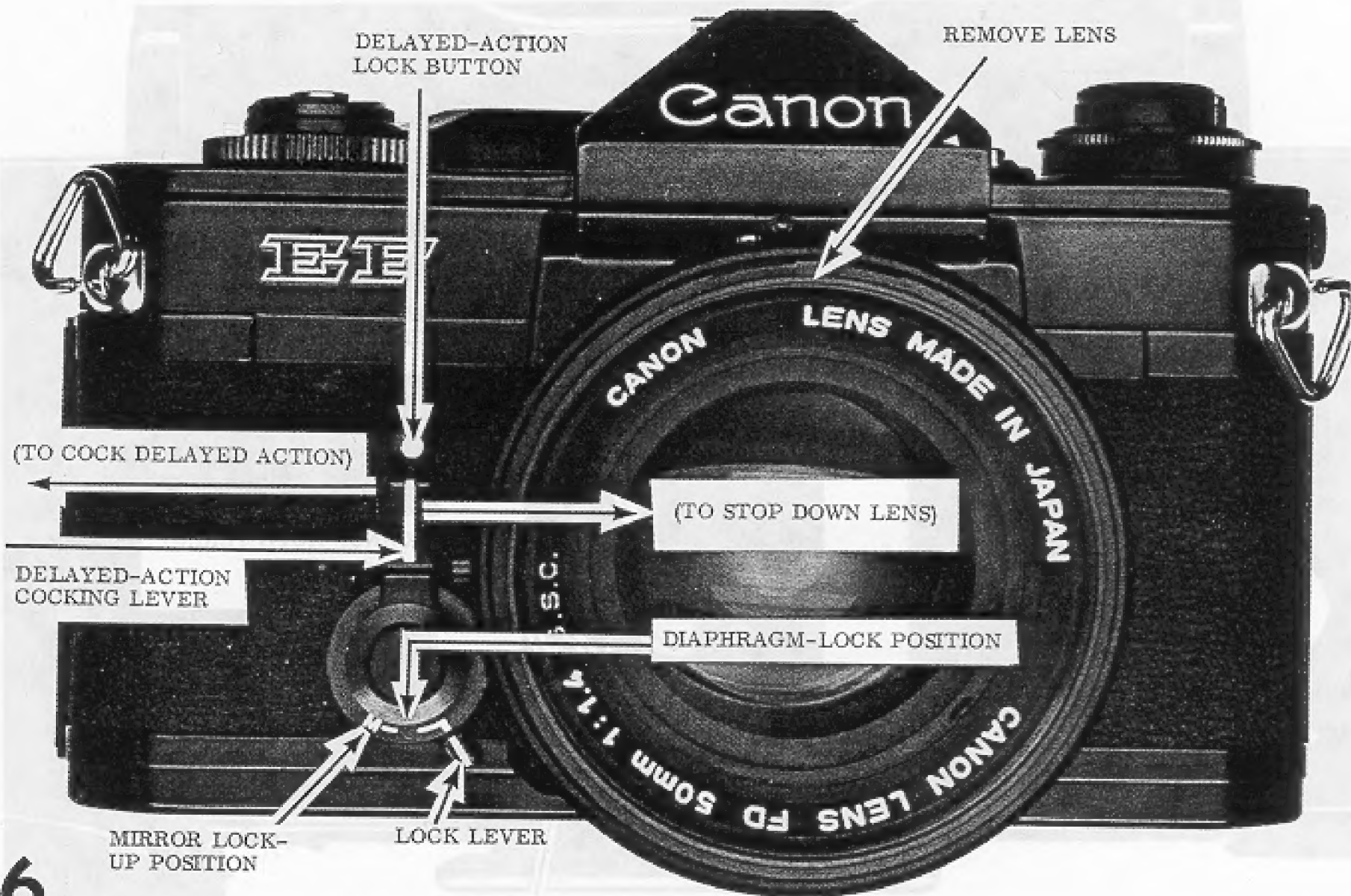
SYNC CONTACT

CATS (CANON AUTO TUNING  
SYSTEM) CONTACTS

DISTANCE  
CONTACT

CAPACITOR-CHARGE  
CONTACT

5



DELATED-ACTION  
LOCK BUTTON

REMOVE LENS

Canon

E17

CANON

LENS MADE IN JAPAN

FD 50mm 1:1.4

(TO STOP DOWN LENS)

DIAPHRAGM-LOCK POSITION

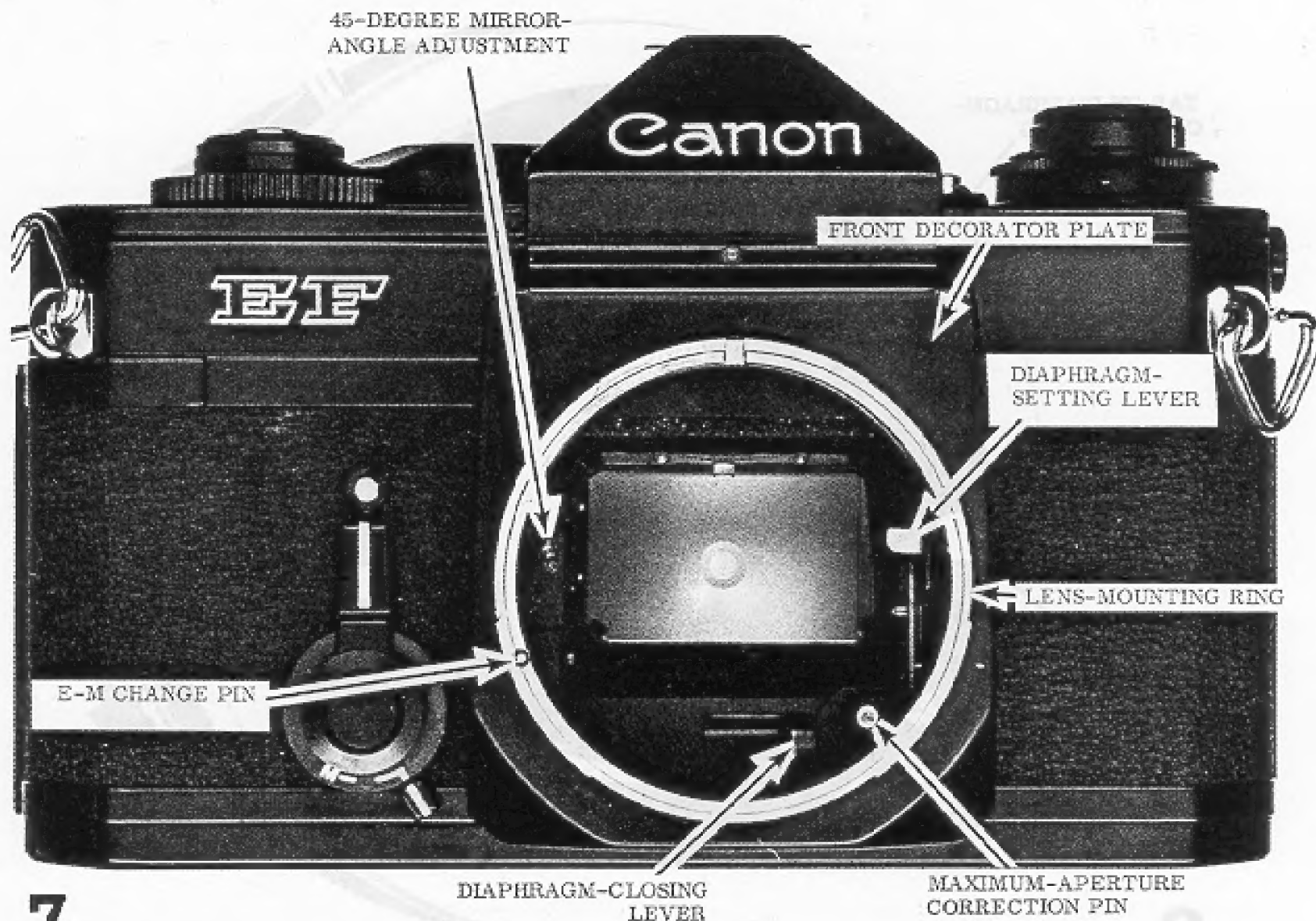
(TO COCK DELAYED ACTION)

DELATED-ACTION  
COCKING LEVER

MIRROR LOCK-  
UP POSITION

LOCK LEVER





Check the flange-focal distance (42.14 mm) by measuring between the front surface of the lens-mounting ring and the film rails. To make an adjustment, first remove the screw at the bottom of the front decorator plate. Lift off the front decorator plate and remove the four screws holding the lens-mounting ring. You can now add or remove spacers to adjust the flange-focal distance and/or parallelism.

TAB ON DIAPHRAGM-  
COUPLING RING

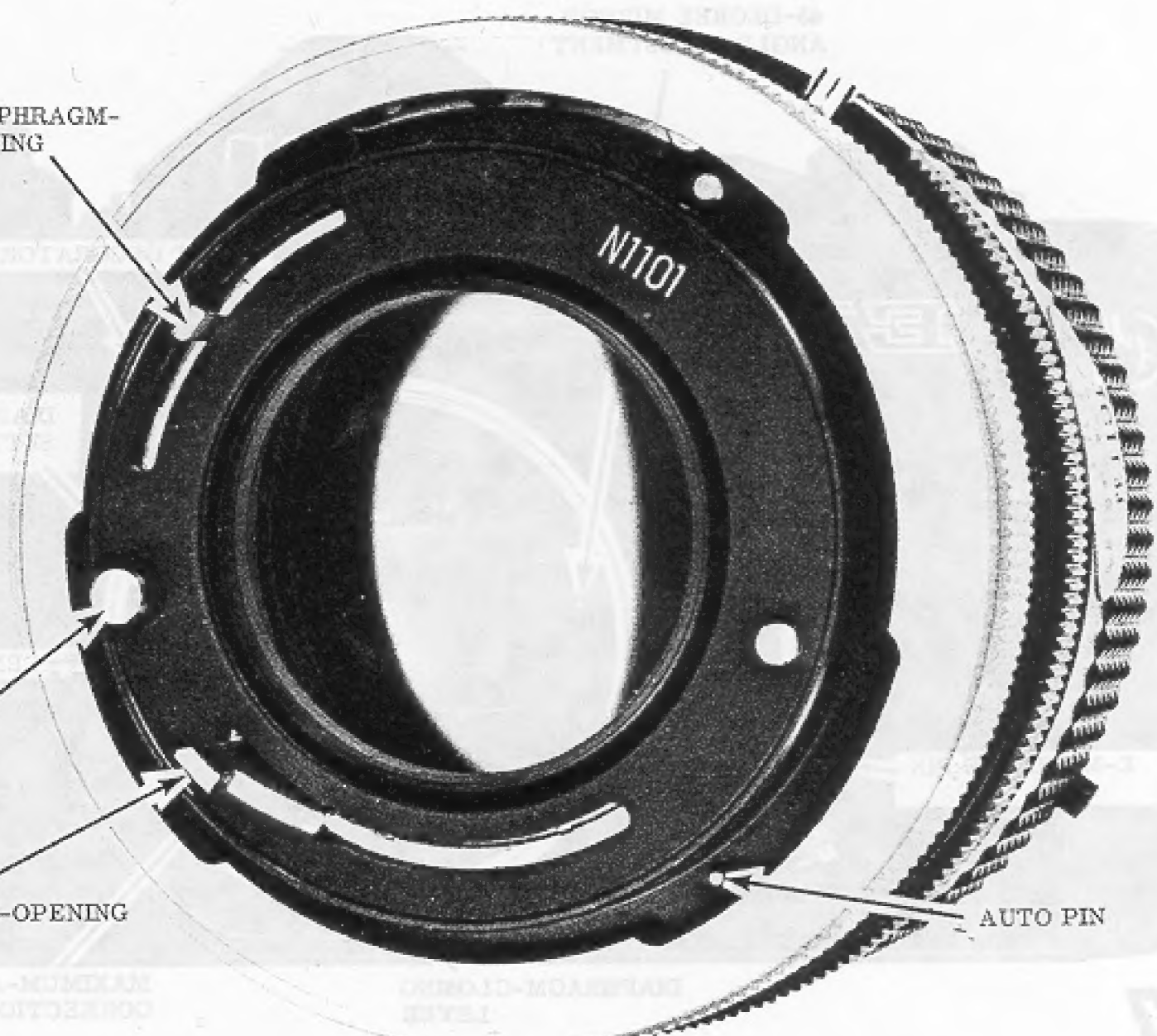
FULL-OPEN  
METERING  
POST

TAB OF  
DIAPHRAGM-OPENING  
RING

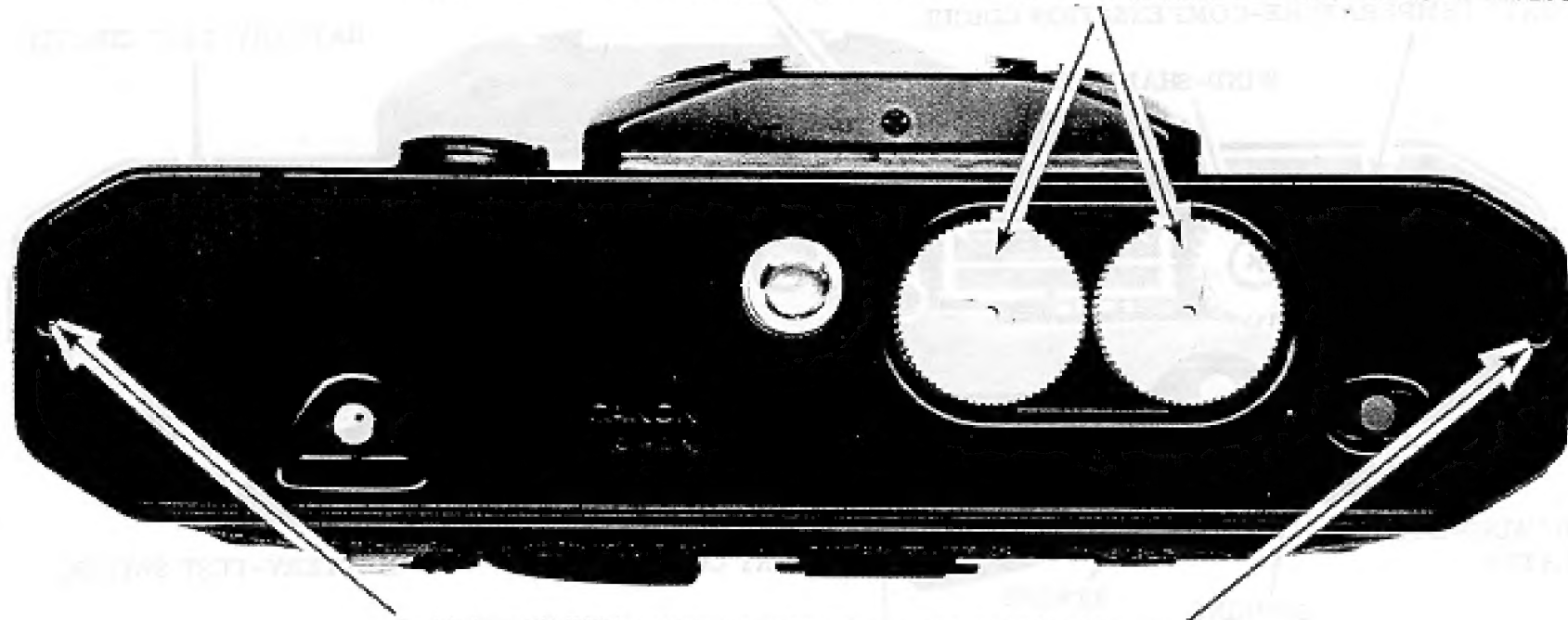
AUTO PIN

8

BACK OF FD LENS



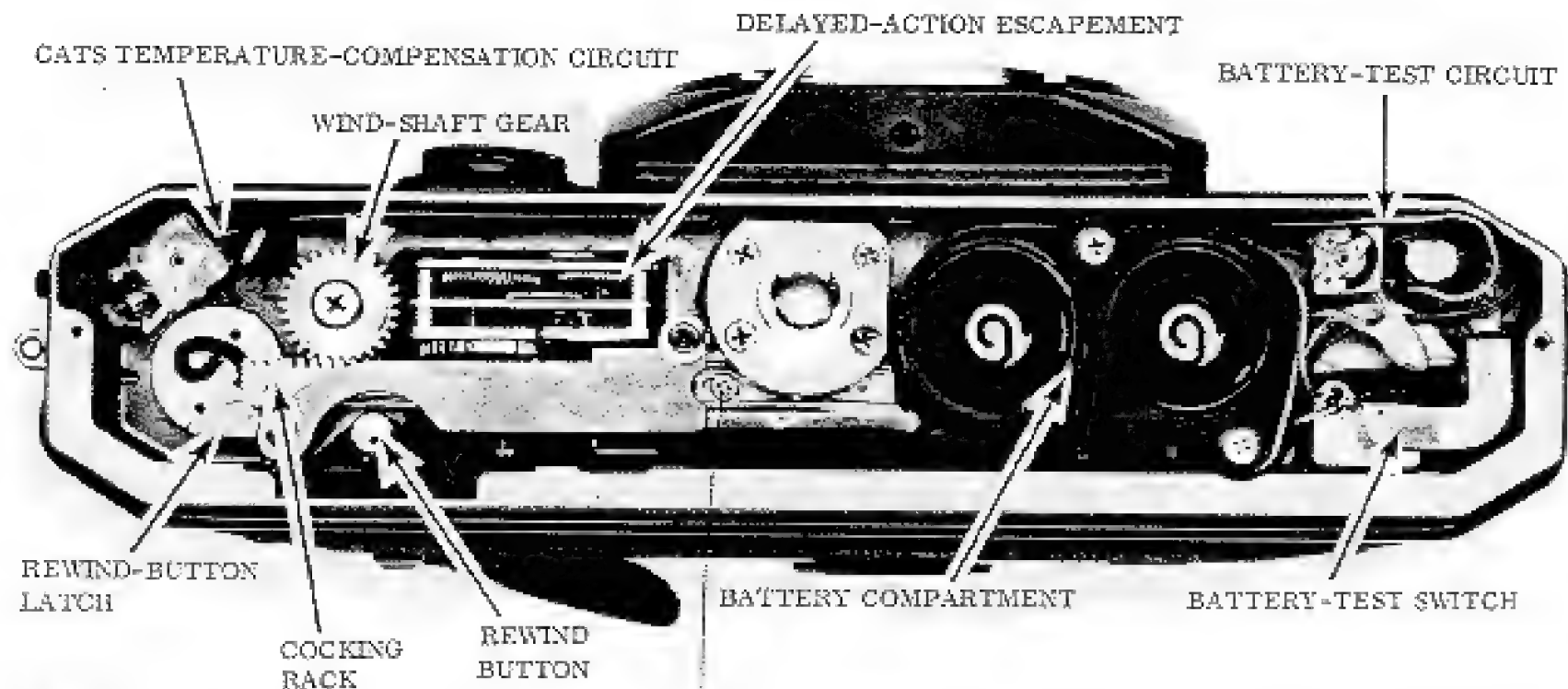
1. REMOVE BATTERY-COMPARTMENT COVERS AND BATTERIES



2. REMOVE TWO SCREWS AND LIFT OFF BOTTOM PLATE

CAUTION: BATTERY-TEST BUTTON WILL BE LOOSE WHEN  
YOU LIFT OFF BOTTOM PLATE

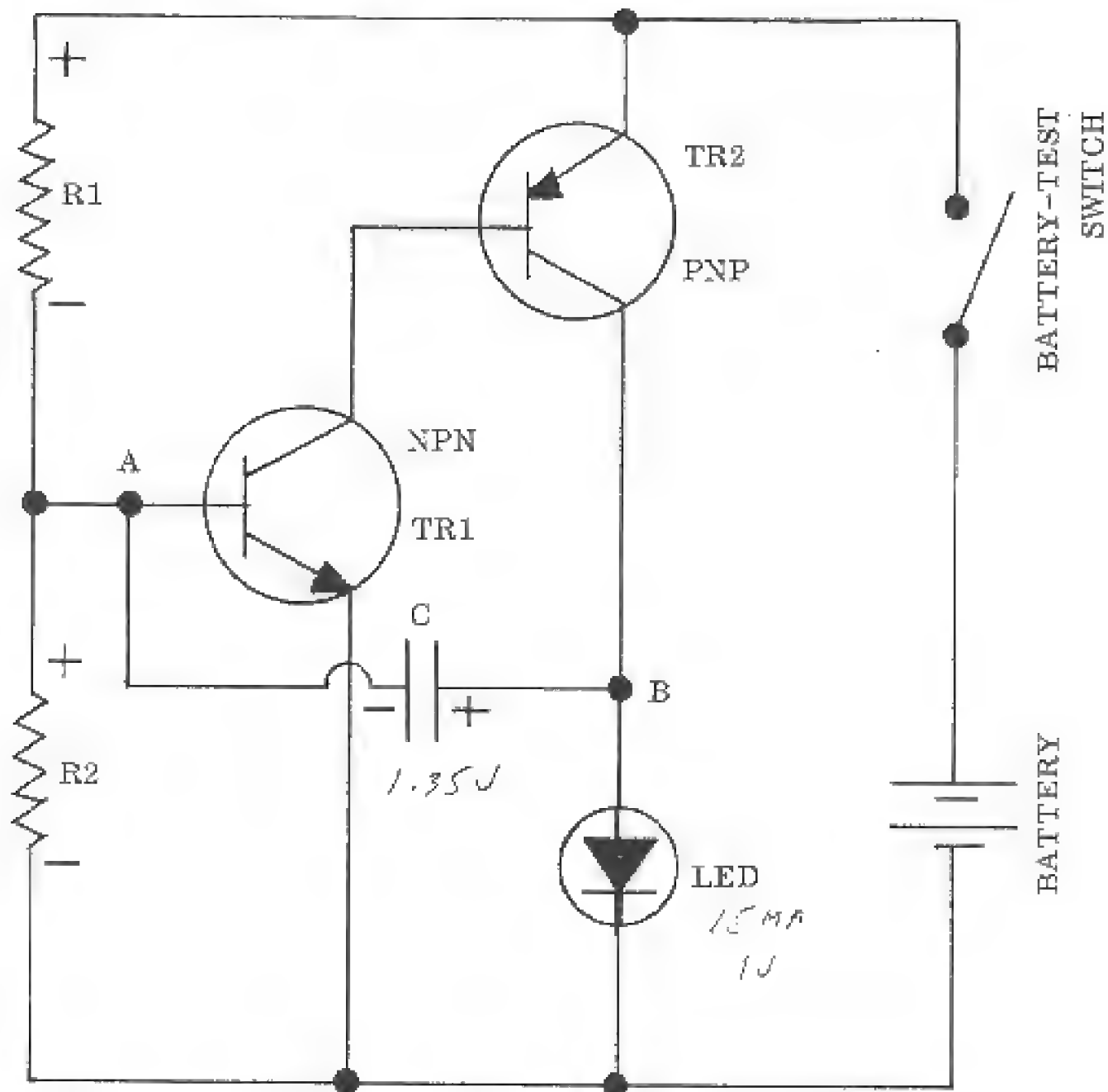




10

*adjustment for overtravel or undertravel  
(cocking)*

# BASIC LED CIRCUIT

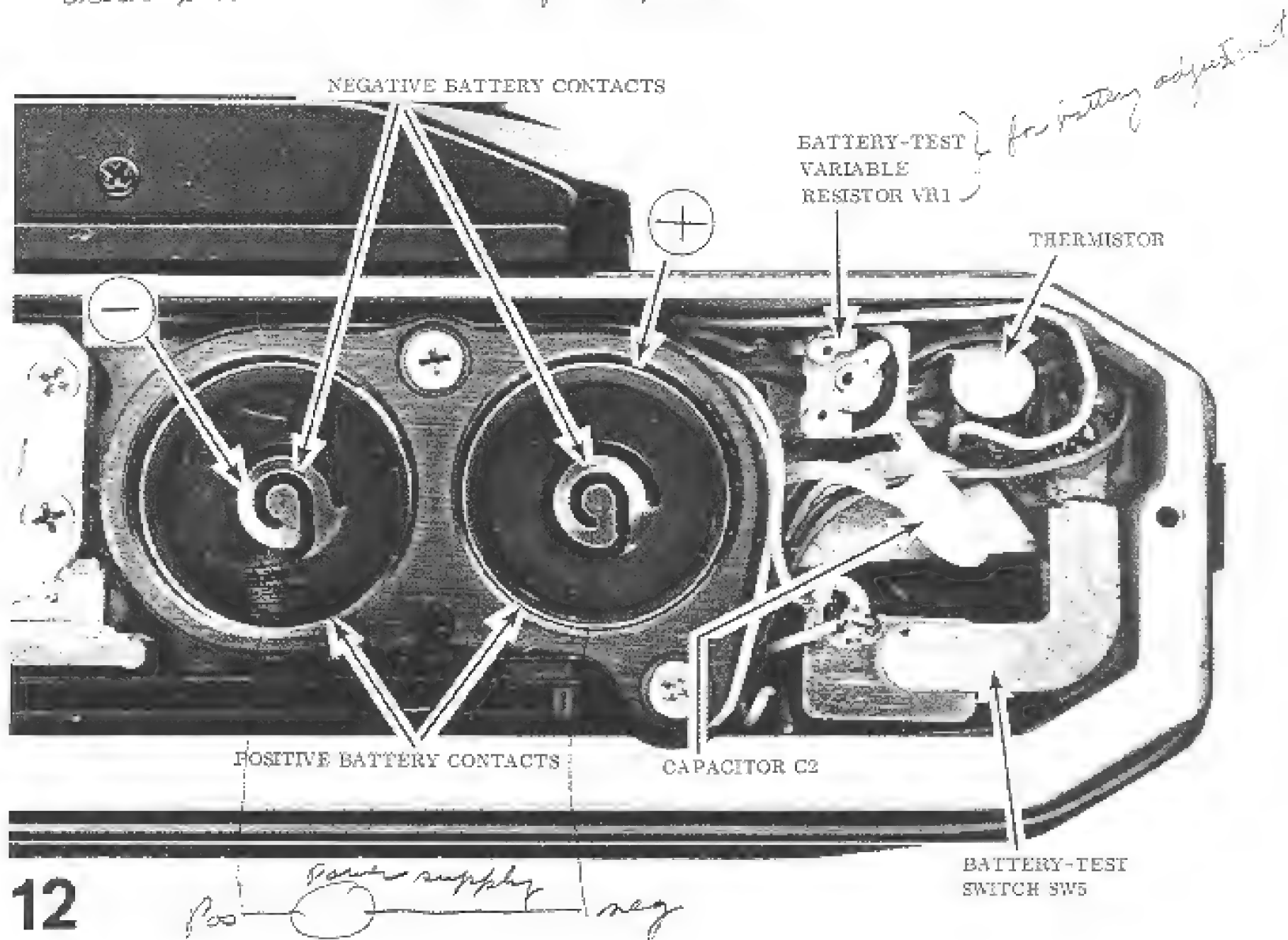


11

on-off Rates 8:1

Current drawn - 1.9 MA

Check insulation on battery compartment

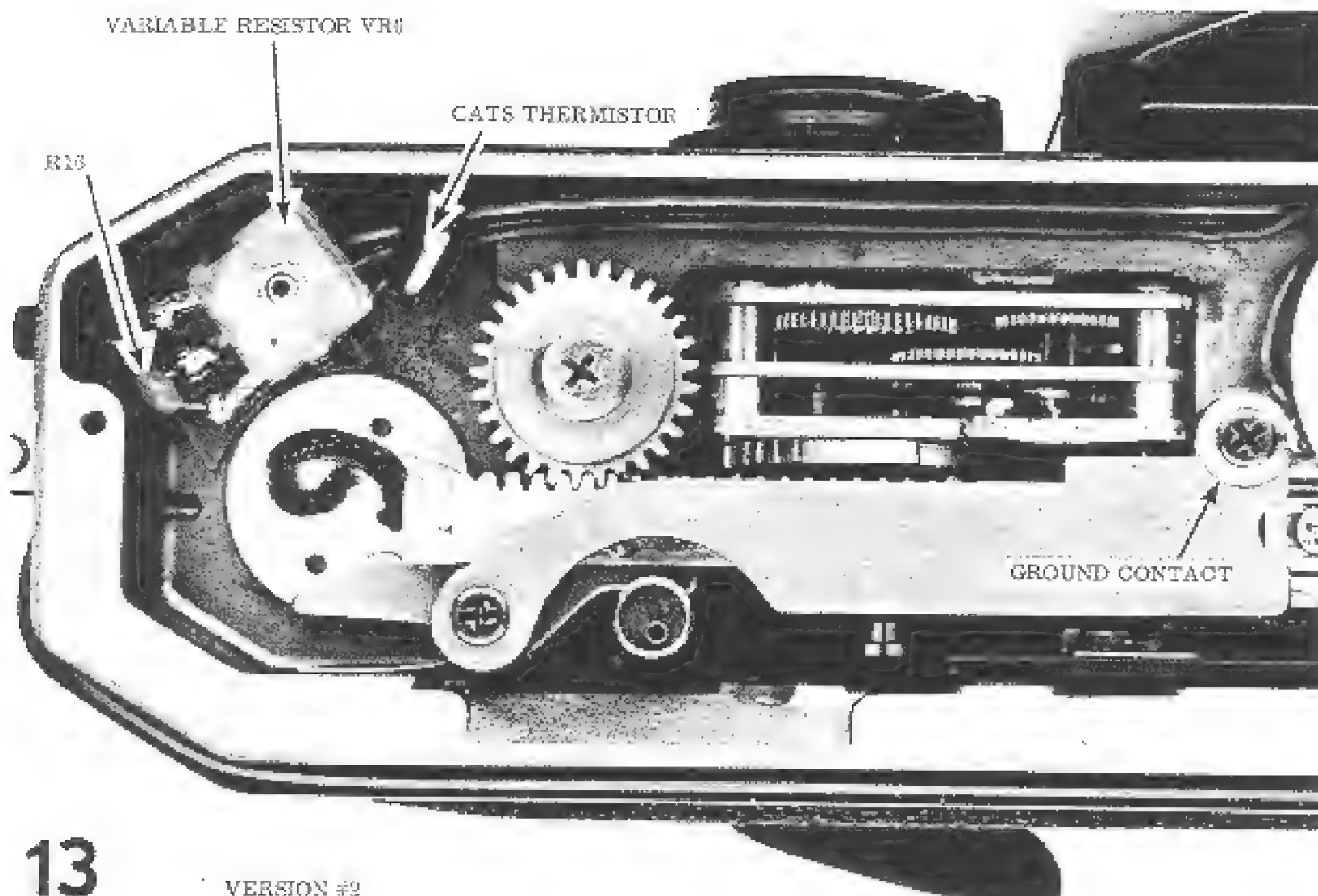


**BATTERY-TEST-CIRCUIT ADJUSTMENT:** Hook a DC power supply to the battery compartment as shown by the polarity indications. With the power supply set at 2.31 volts, the LED should operate when you close the battery-test switch; the LED should not operate at 2.26 volts. Make the adjustment with the battery-test variable resistor VR1.

If battery runs down fast = Take off battery holder & tape underside (maybe shorted)



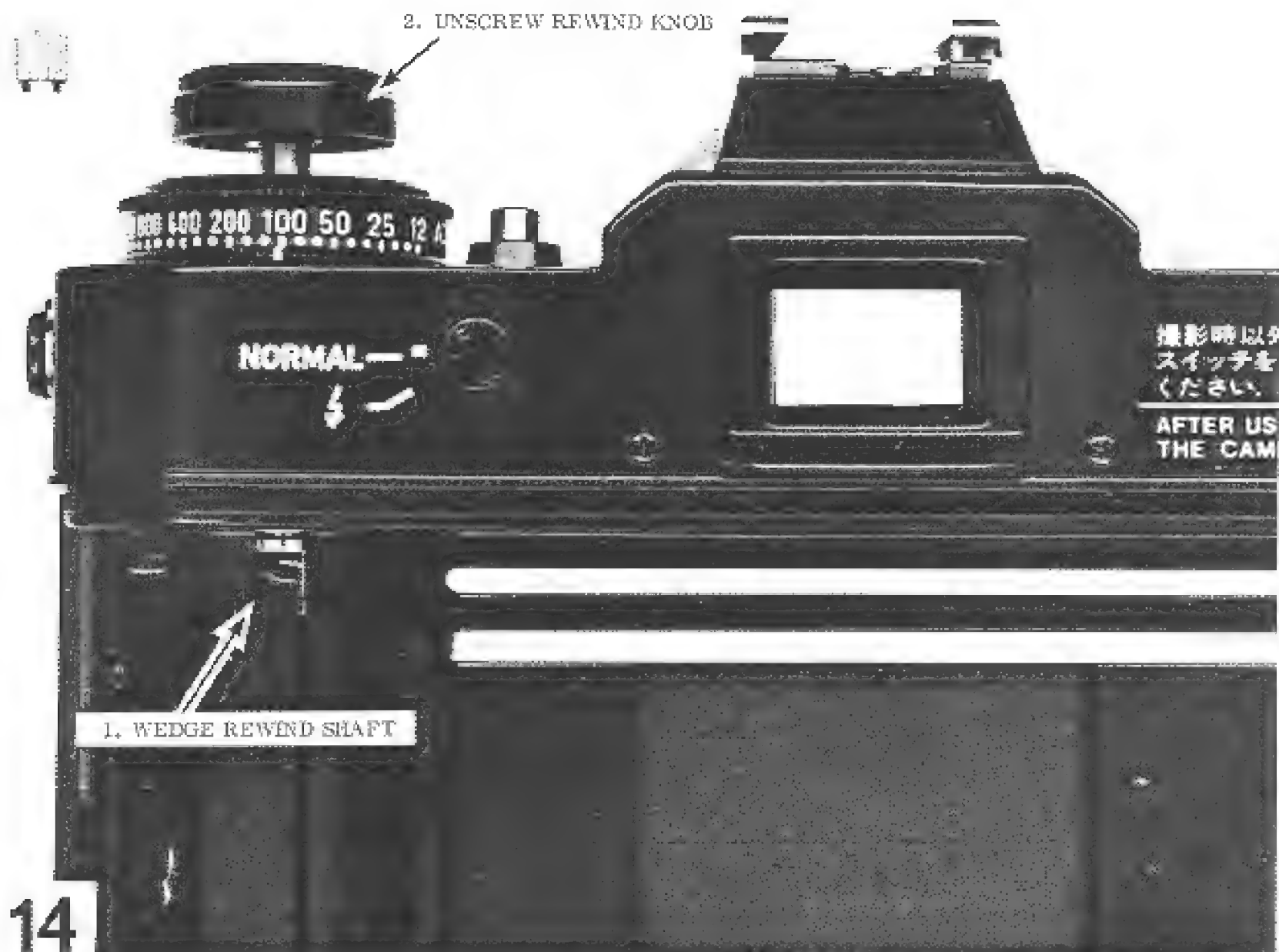




The original Canon EF (version #1) does not have the CATS temperature-compensation circuit. The temperature-compensation circuit was added as a modification to the model illustrated (version #2). Later models (versions #3 and #4) have the thermistor and the fixed resistor at the top of the camera; in these cameras, the only part on the circuit board shown is the variable resistor VR6.

The red wire connects resistor VR6 to ground in the model illustrated. Later models use a screw to hold the VR6 circuit board. So the screw acts as a ground connection and eliminates the need for the red wire.



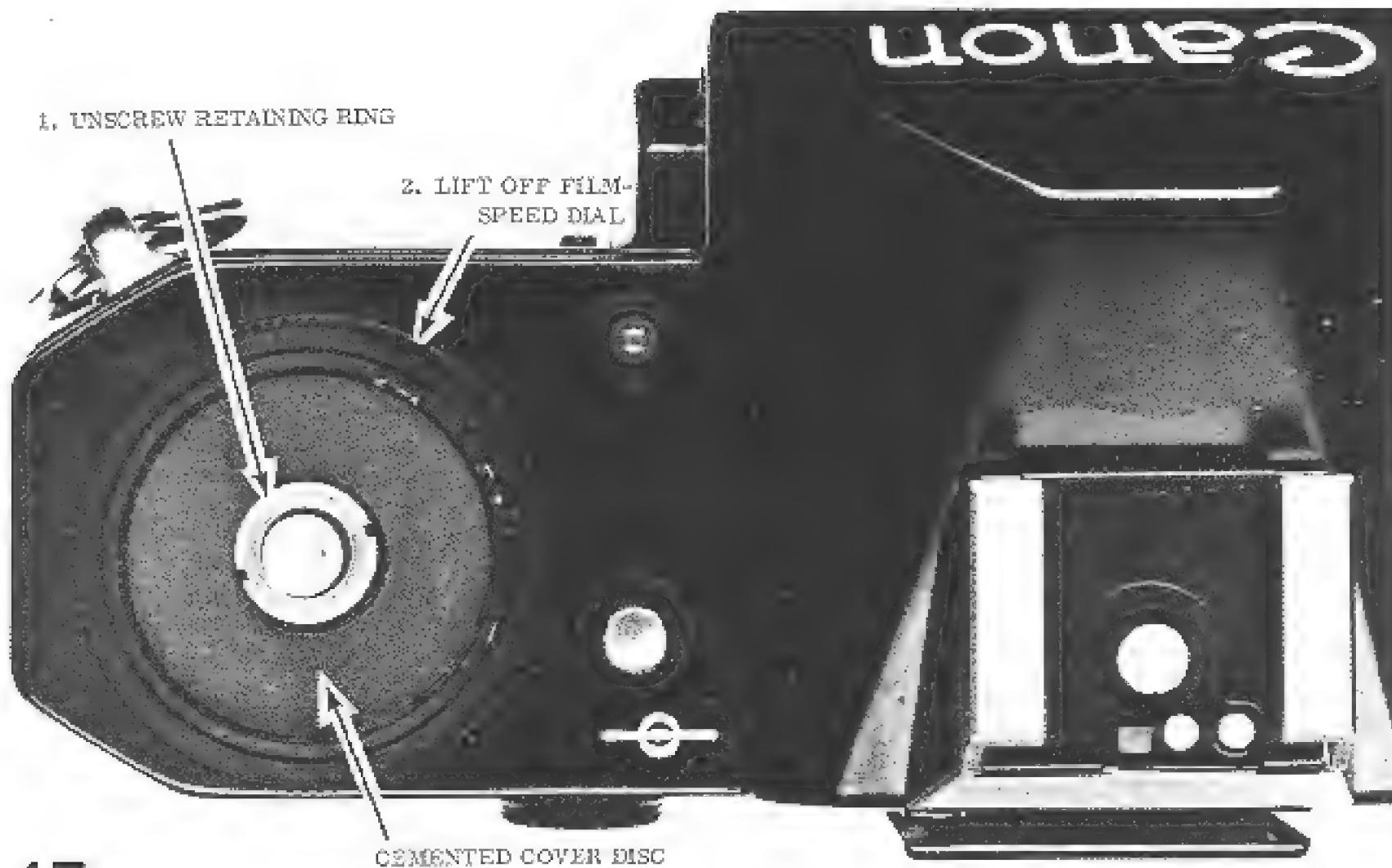


*Disassembly*

*ASA 100*

*PULB*

*on-off selector off*





FILM-SPEED DIAL WITH CEMENTED  
COVER DISC REMOVED

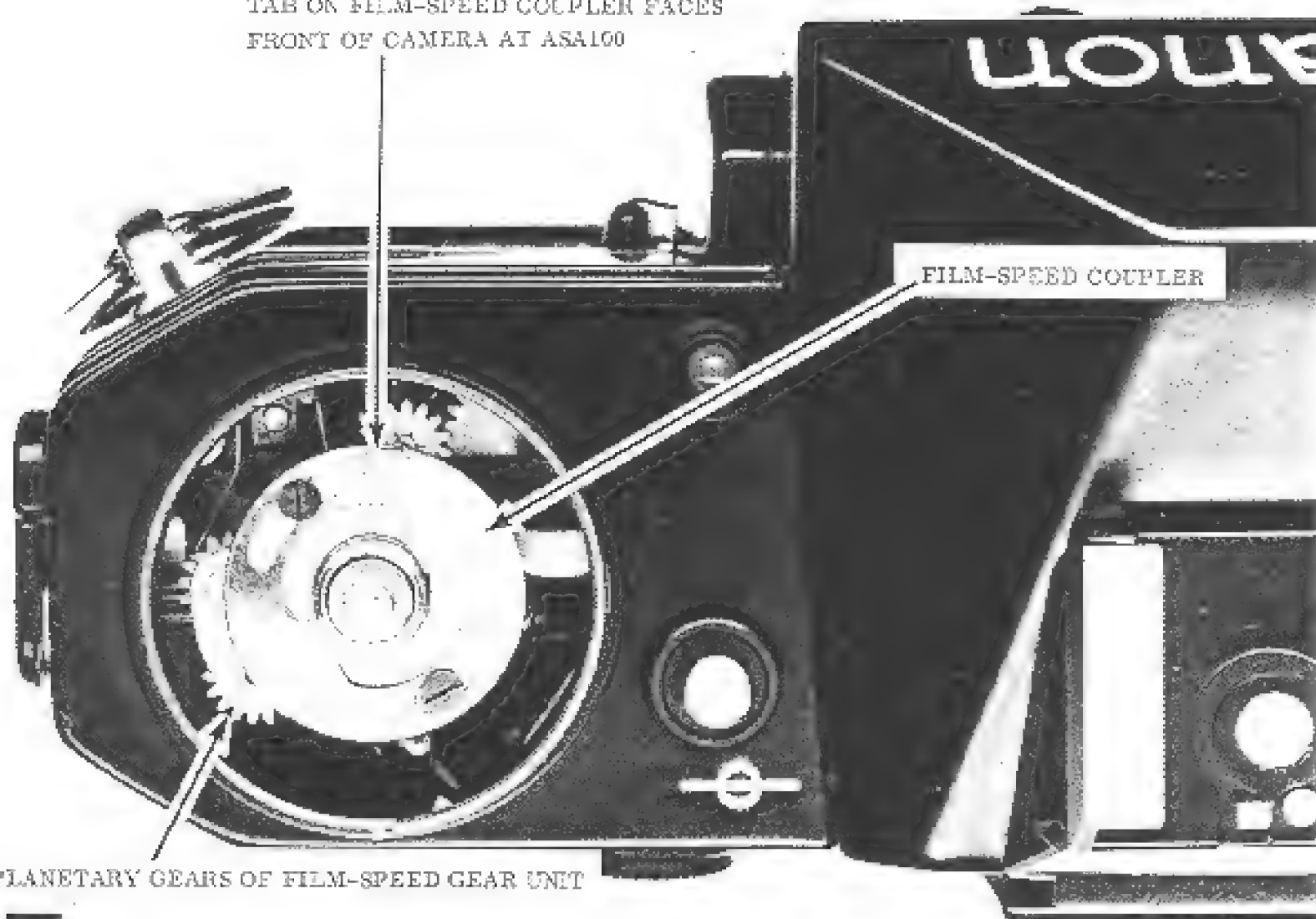
FORK ON FILM-SPEED DIAL STRADDLES TAB ON FILM-SPEED COUPLER

SCREWS FOR MINOR ADJUSTMENTS ONCE TOP COVER IS INSTALLED

TAB ON FILM-SPEED COUPLER FACES  
FRONT OF CAMERA AT ASA100

FILM-SPEED COUPLER

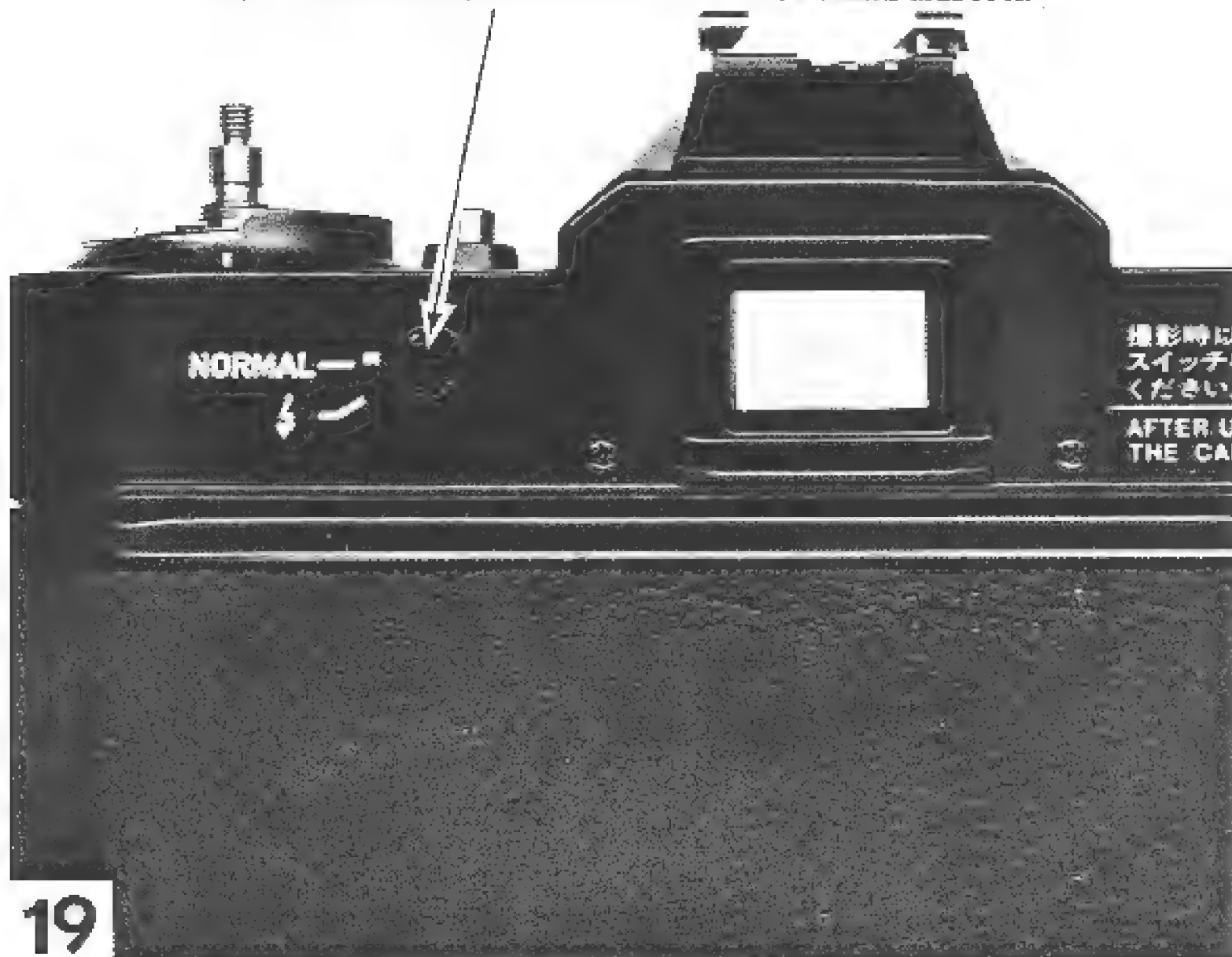
PLANETARY GEARS OF FILM-SPEED GEAR UNIT



SPECIAL TOOL MAY BE SCREWED ONTO  
RETAINING-RING THREADS TO HOLD  
PARTS IN ASA100 POSITION

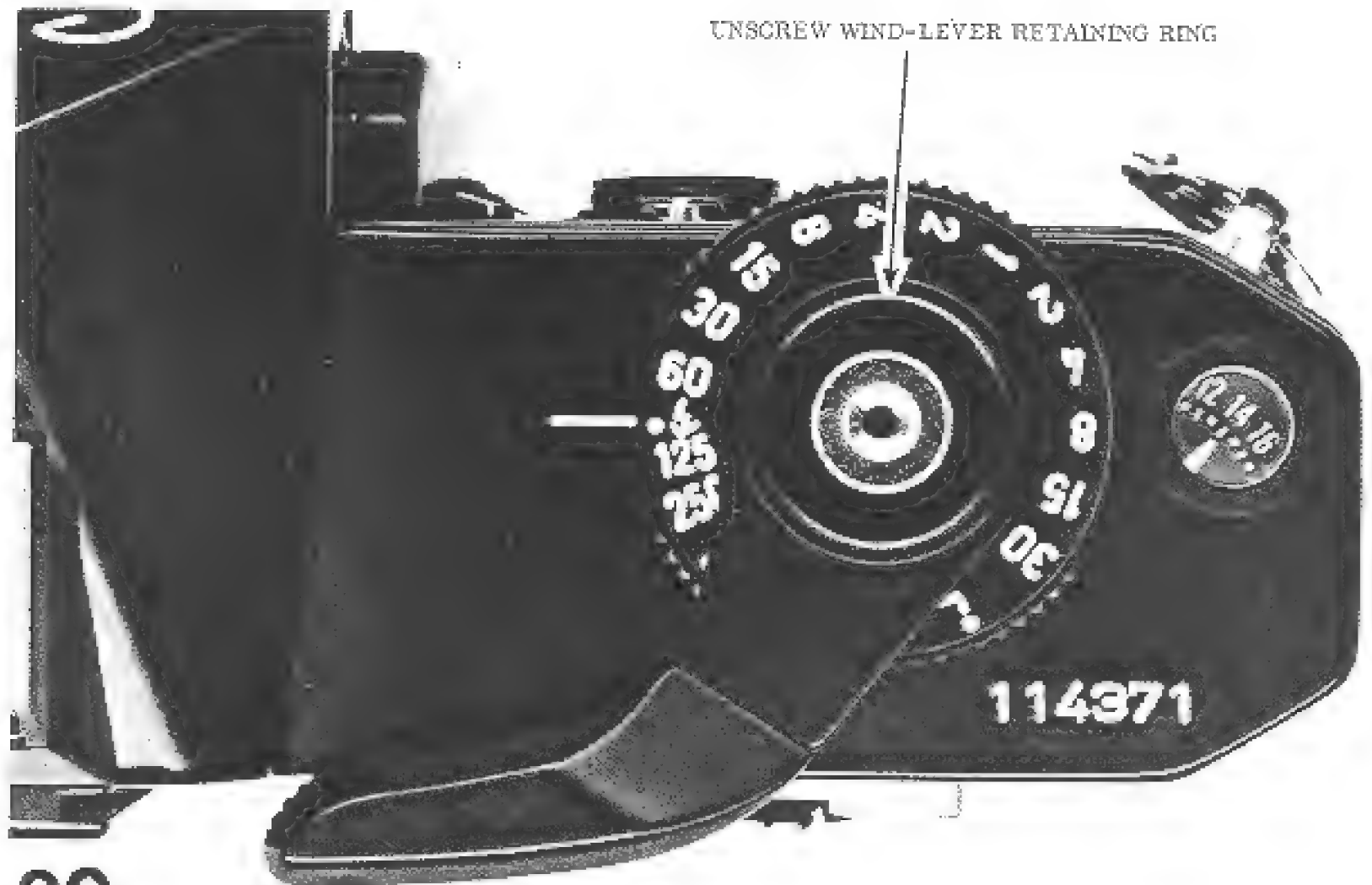


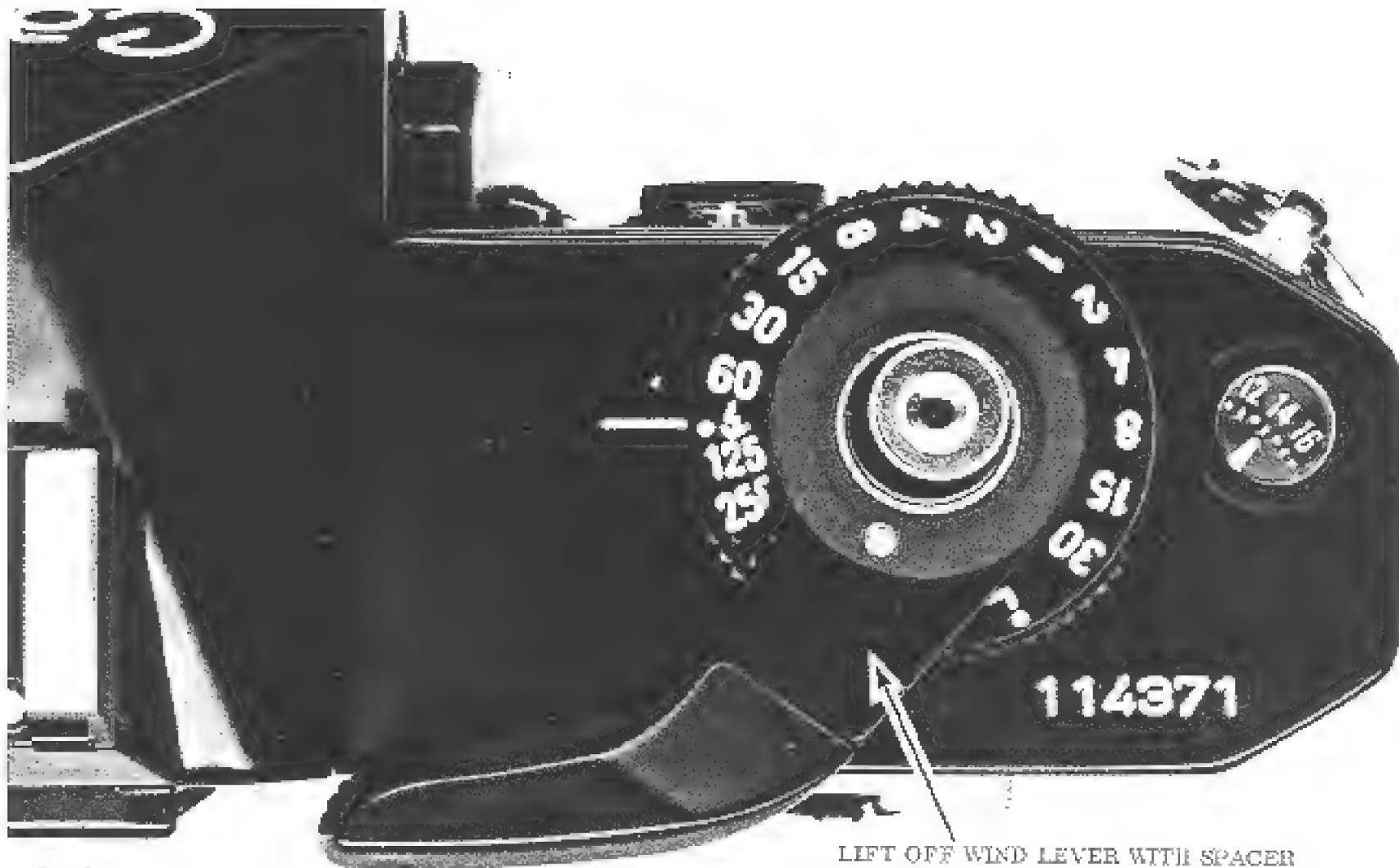
UNSCREW RETAINING SCREW AND LIFT OFF CATS-NORMAL SELECTOR



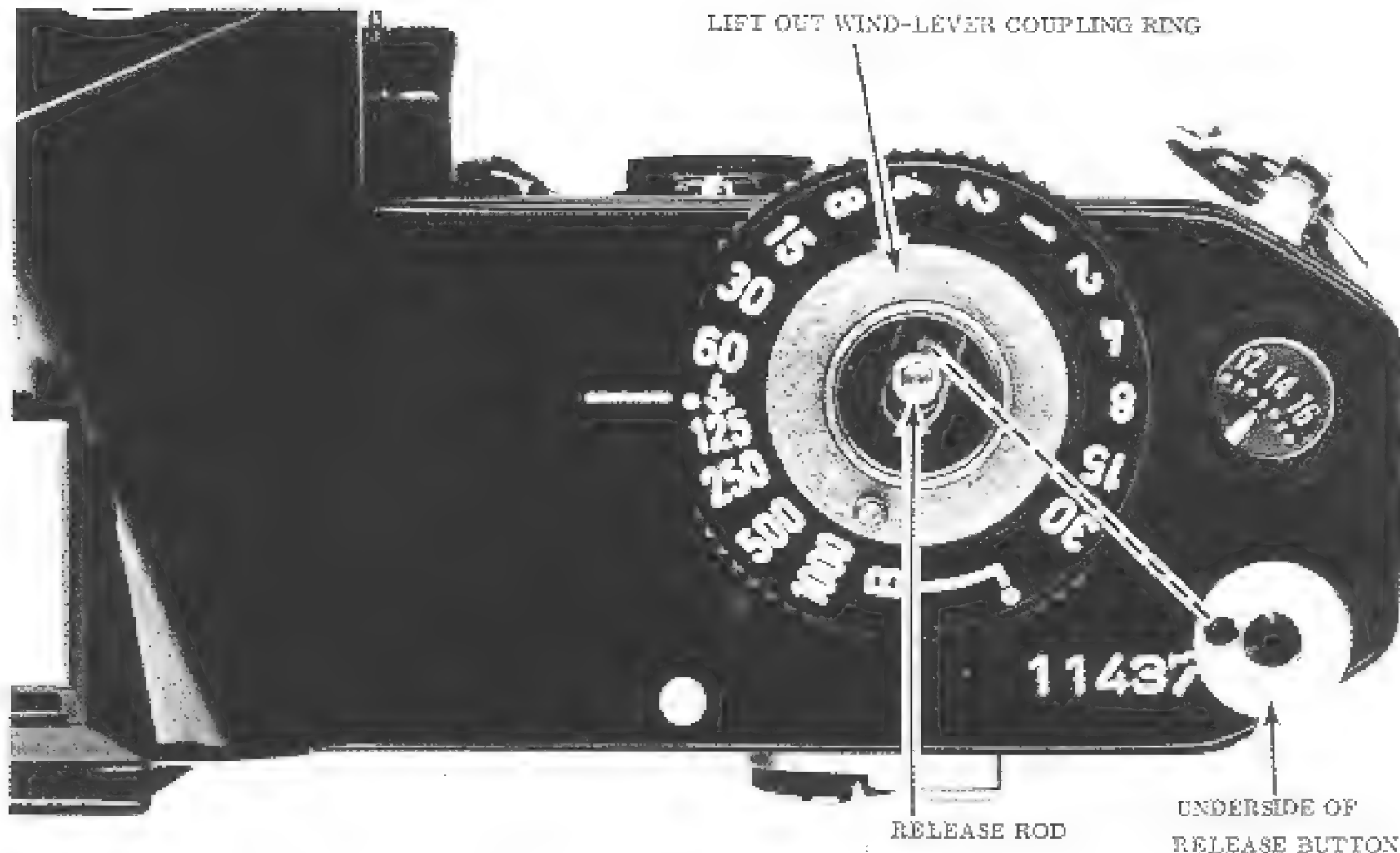


UNSCREW WIND-LEVER RETAINING RING



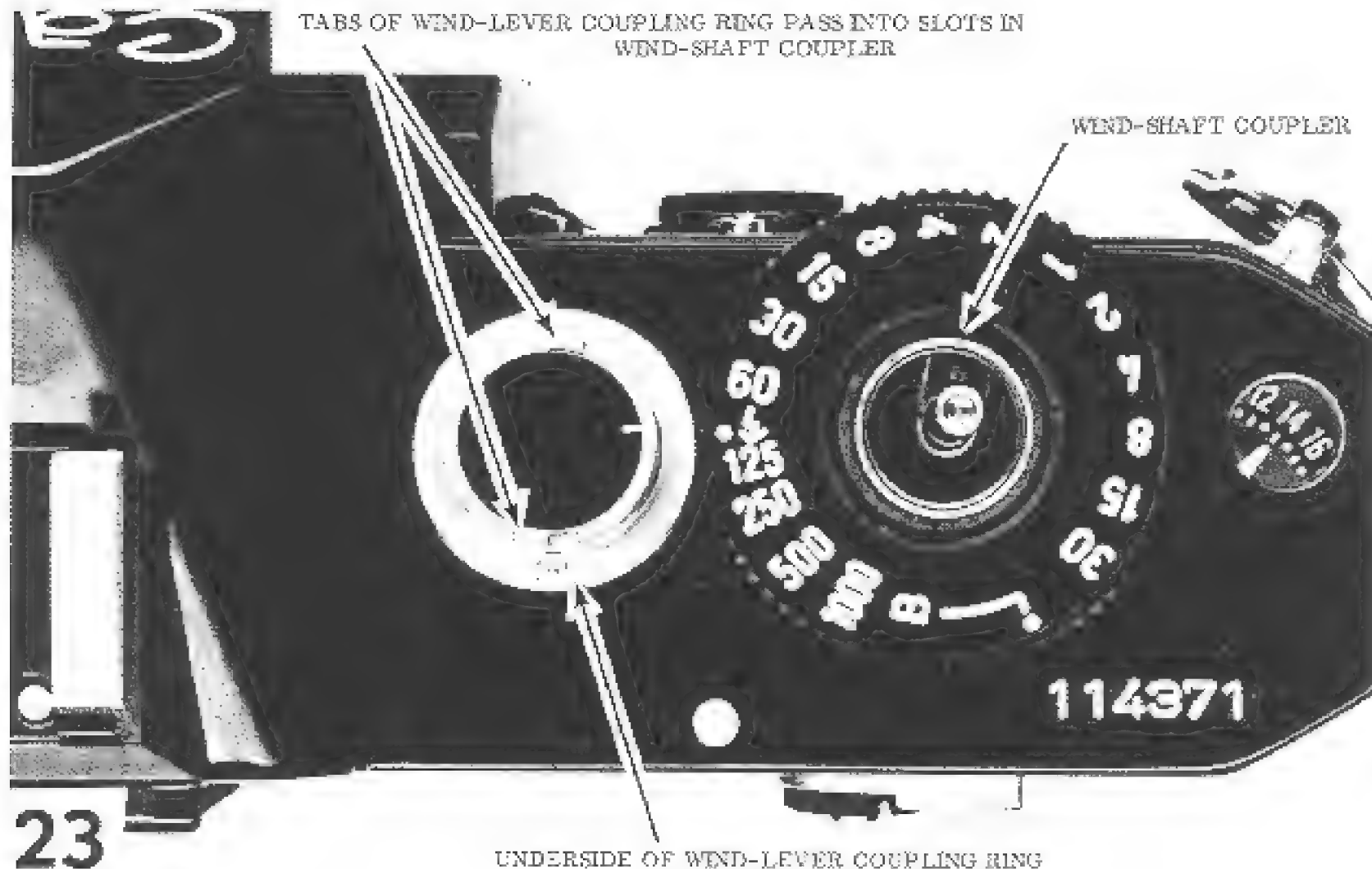


LIFT OFF WIND LEVER WITH SPACER



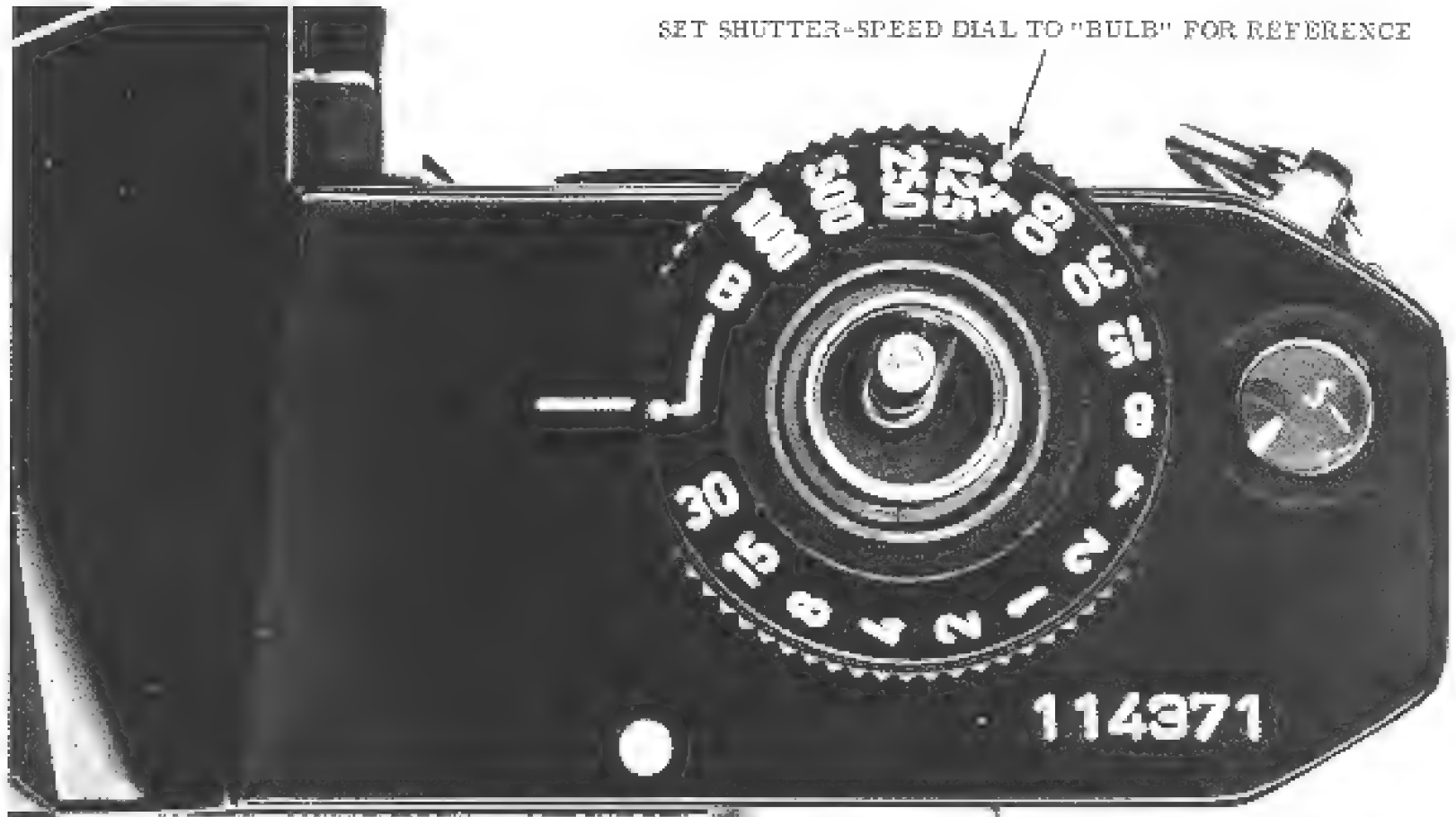
22

NOTE: IT'S NOT NECESSARY TO REMOVE THE RELEASE BUTTON; IF YOU DO, NOTE THE HOLE IN THE RELEASE BUTTON THAT FITS OVER THE PIN ON THE RELEASE ROD

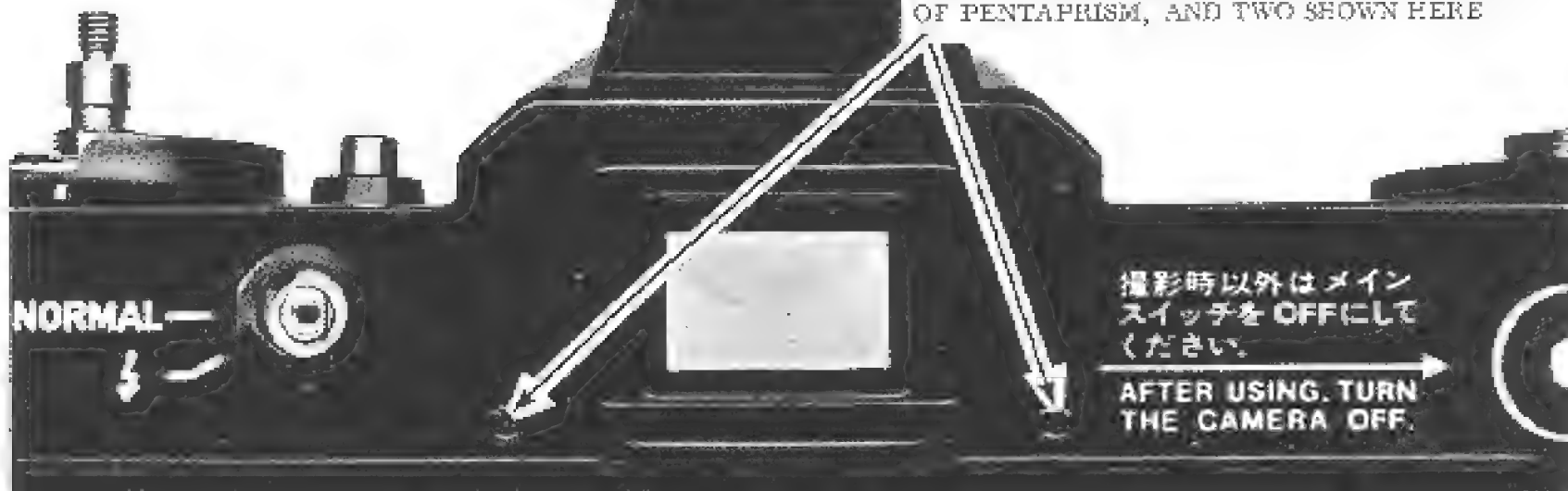




SET SHUTTER-SPEED DIAL TO "BULB" FOR REFERENCE



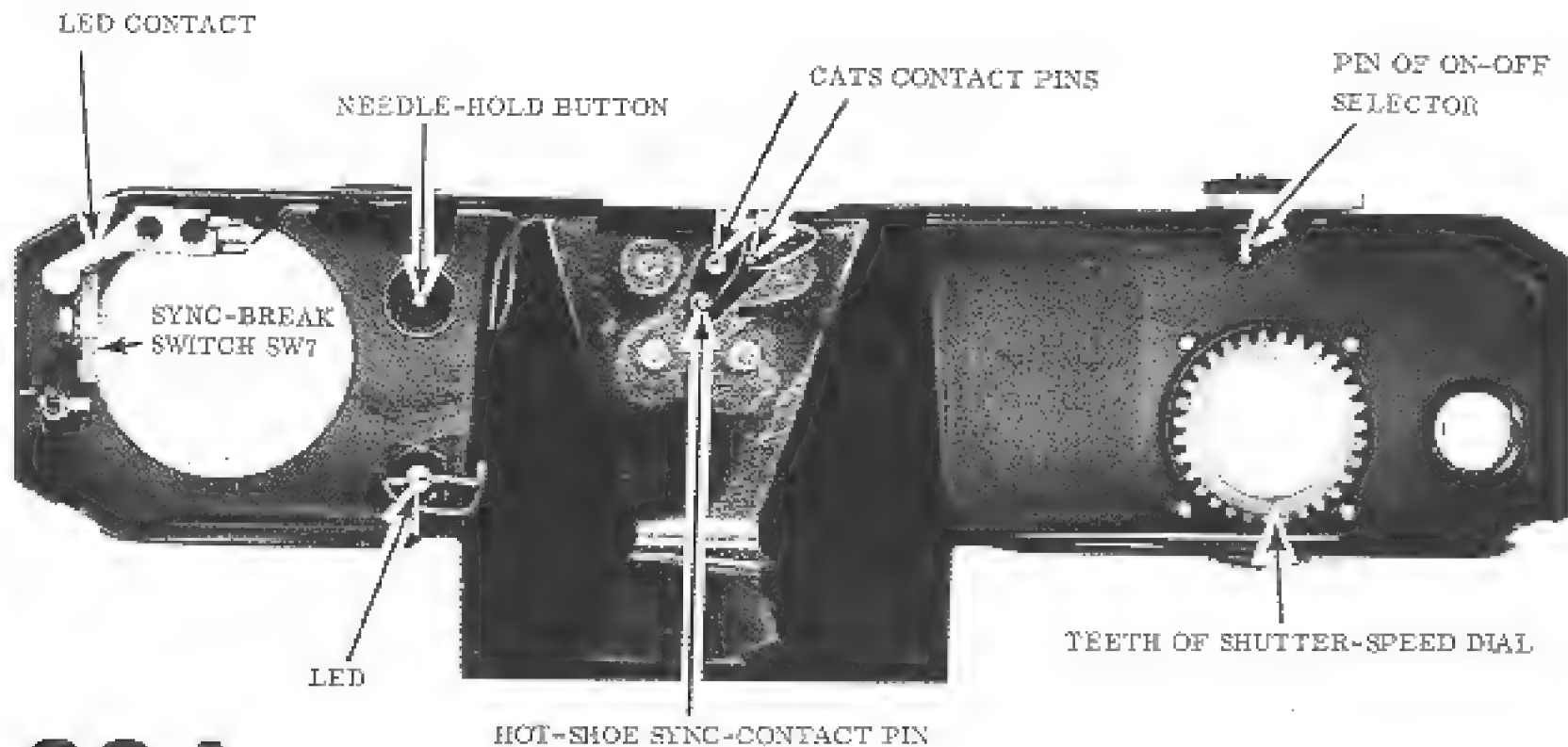
1. REMOVE SIX TOP-COVER RETAINING SCREWS --  
TWO AT ENDS OF TOP COVER, TWO AT SIDES  
OF PENTAPRISM, AND TWO SHOWN HERE



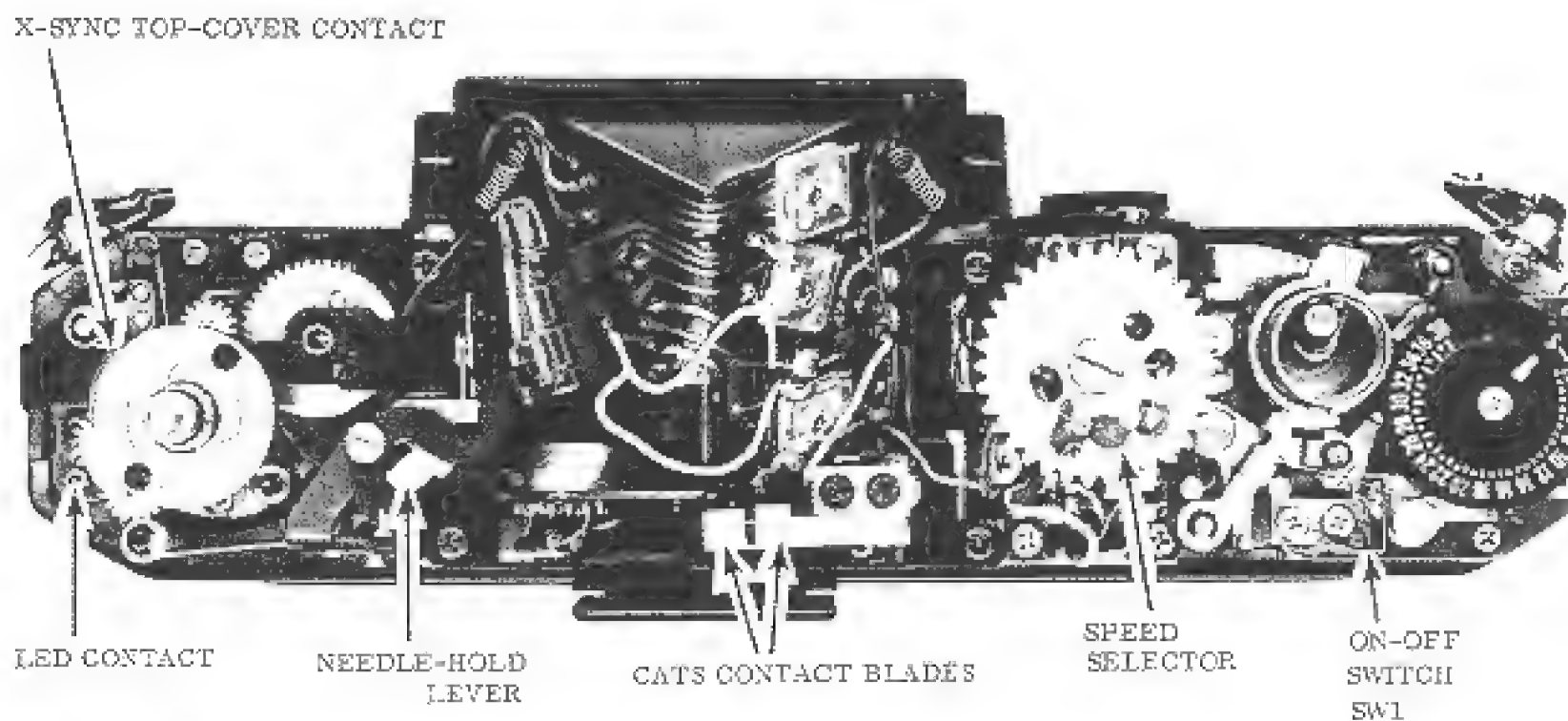
撮影時以外はメイン  
スイッチをOFFにして  
ください。

AFTER USING. TURN  
THE CAMERA OFF.

2. LIFT OFF TOP COVER



26A



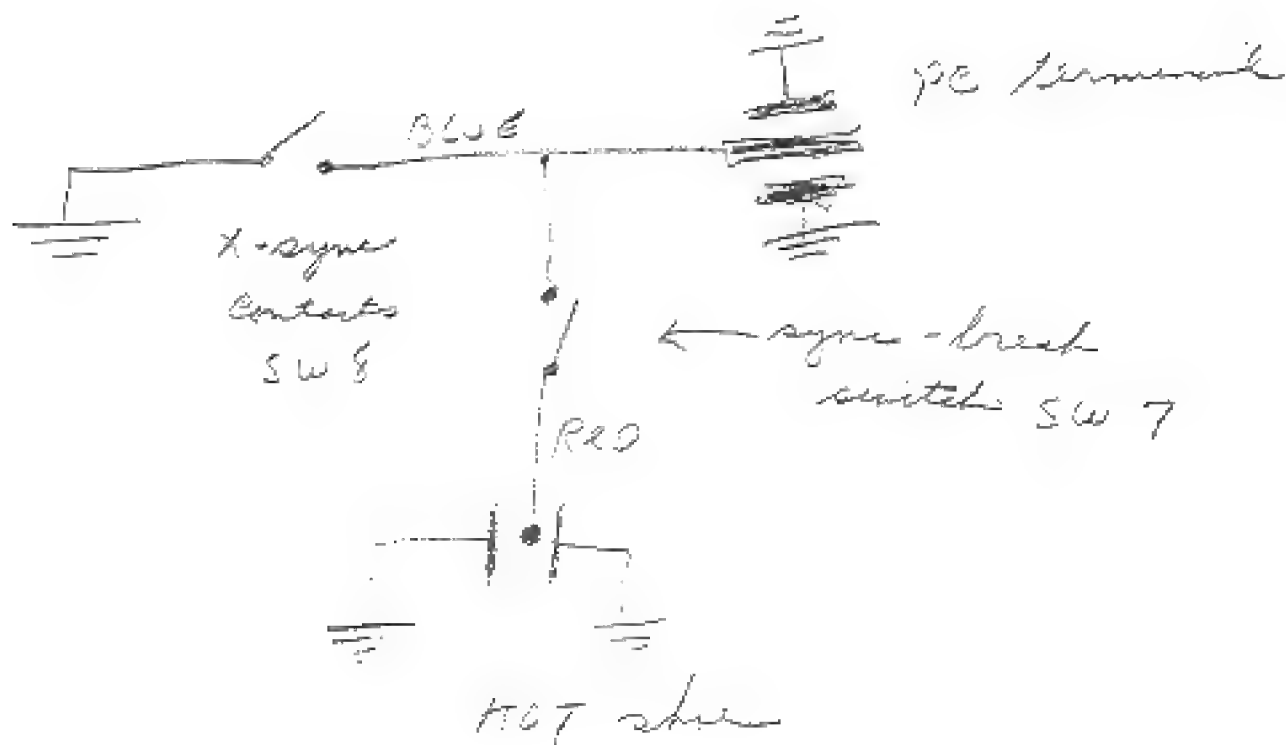
26B



LED

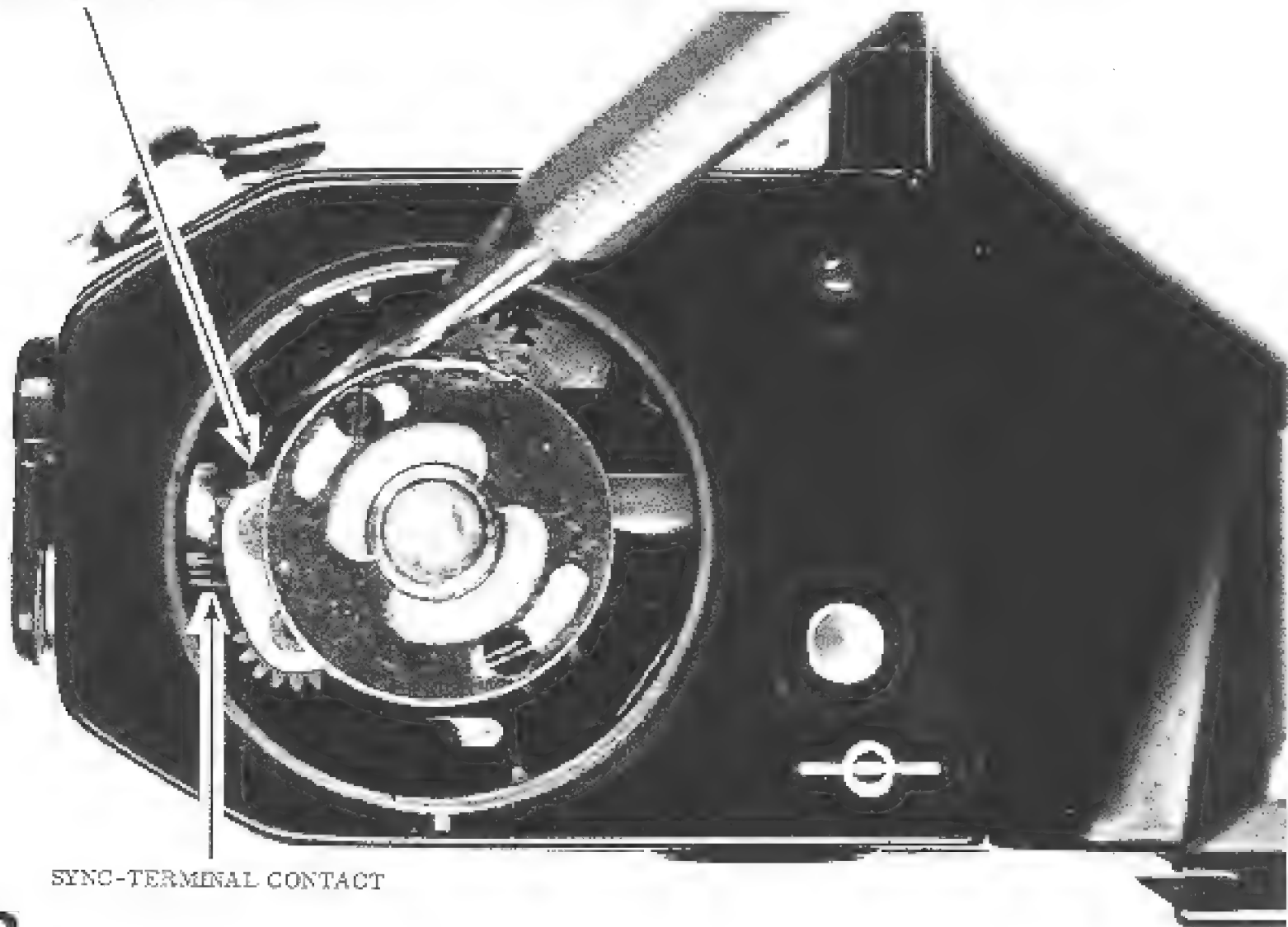
THE LED SHOULD GLOW WITH 2 VOLTS  
APPLIED ACROSS THE TERMINALS

**27**

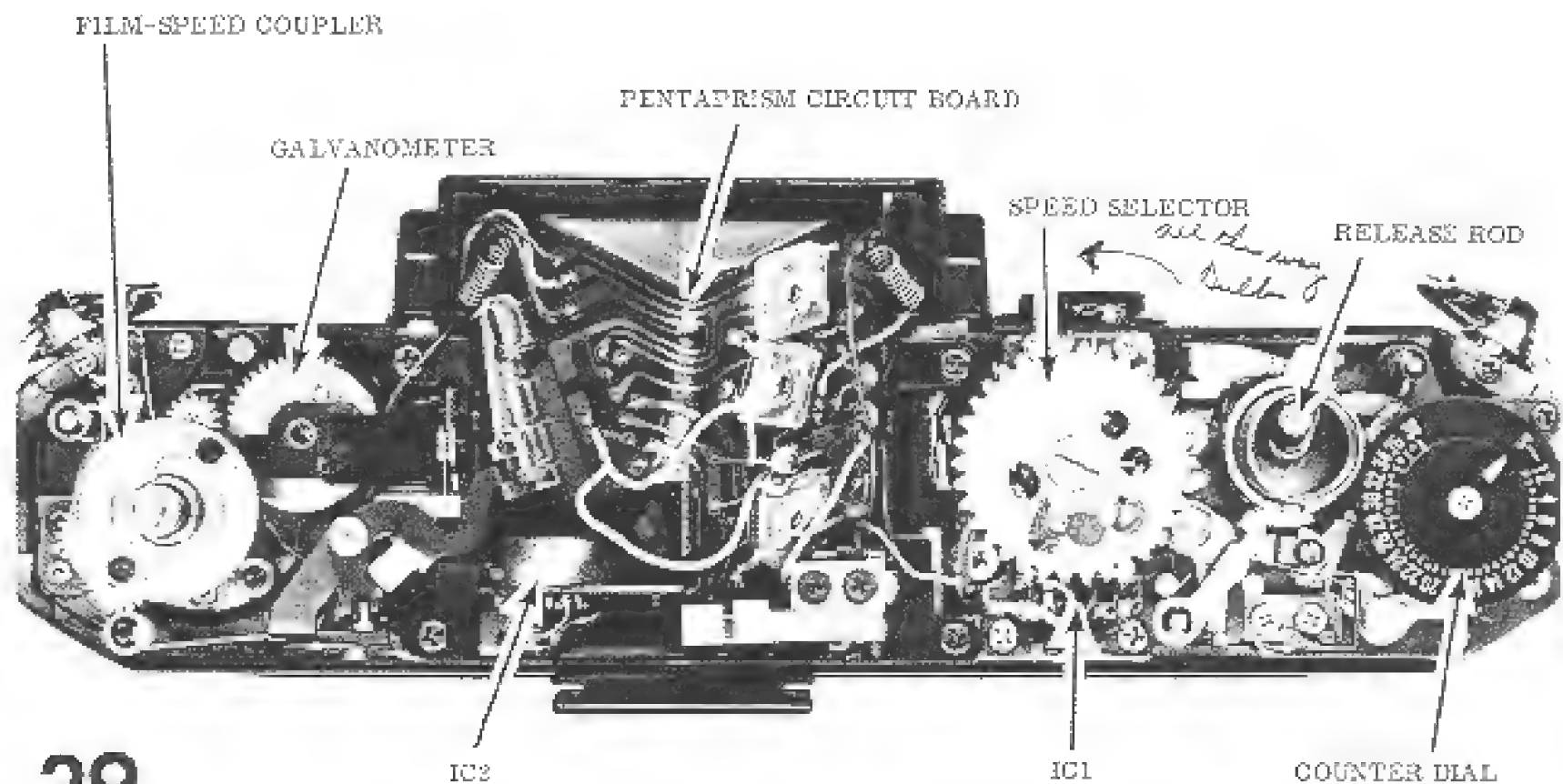




WHEN REPLACING THE TOP COVER, HOLD THE X-SYNC TOP-COVER CONTACT AWAY FROM THE SYNC-TERMINAL CONTACT



SYNC-TERMINAL CONTACT

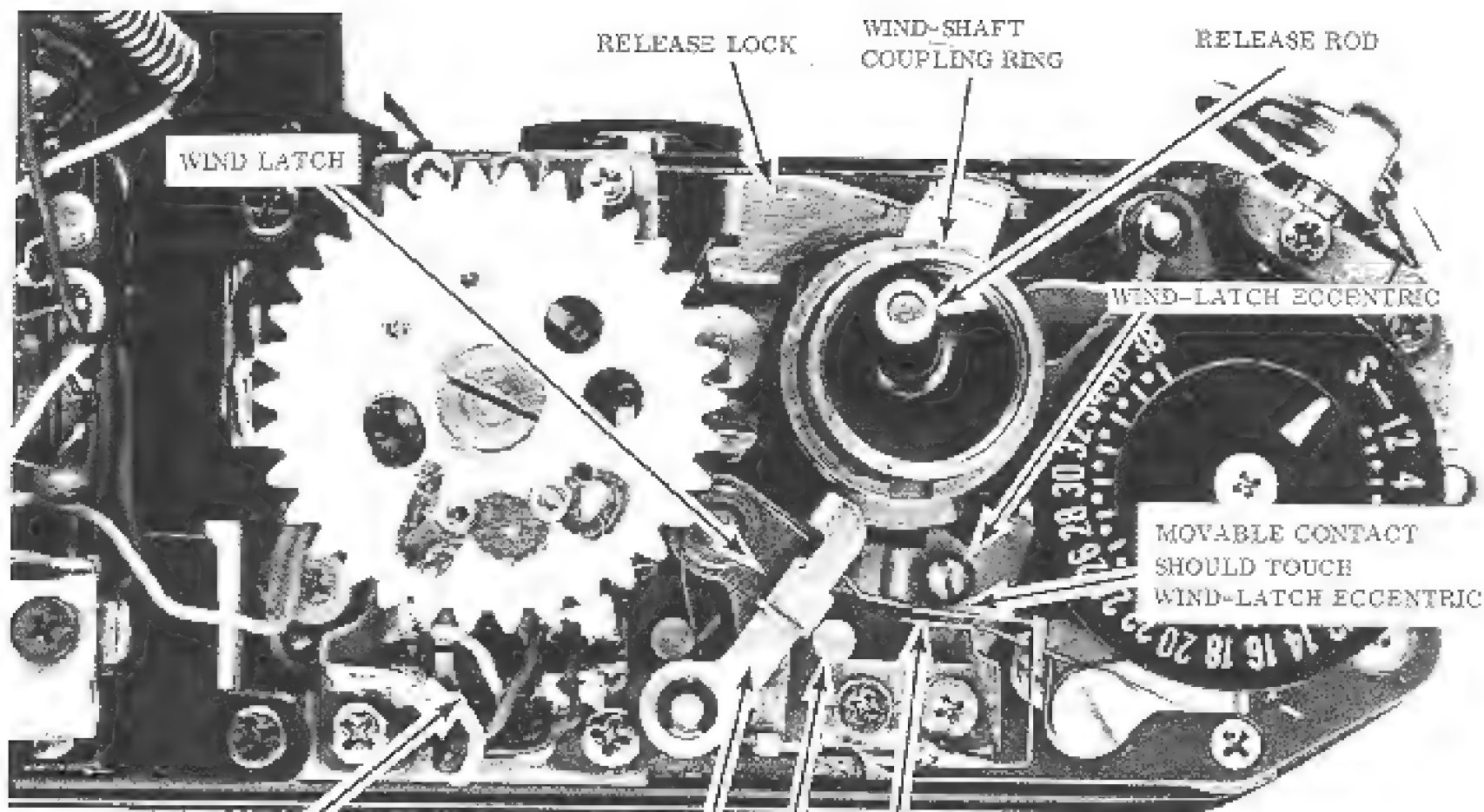


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IC1 - Electromagnet switch

IC2 - magnet amplifier

when faulty - meter drops suddenly down



WIND LATCH

RELEASE LOCK

WIND-SHAFT  
COUPLING RING

RELEASE ROD

WIND-LATCH ECCENTRIC

MOVABLE CONTACT  
SHOULD TOUCH  
WIND-LATCH ECCENTRIC

IC1

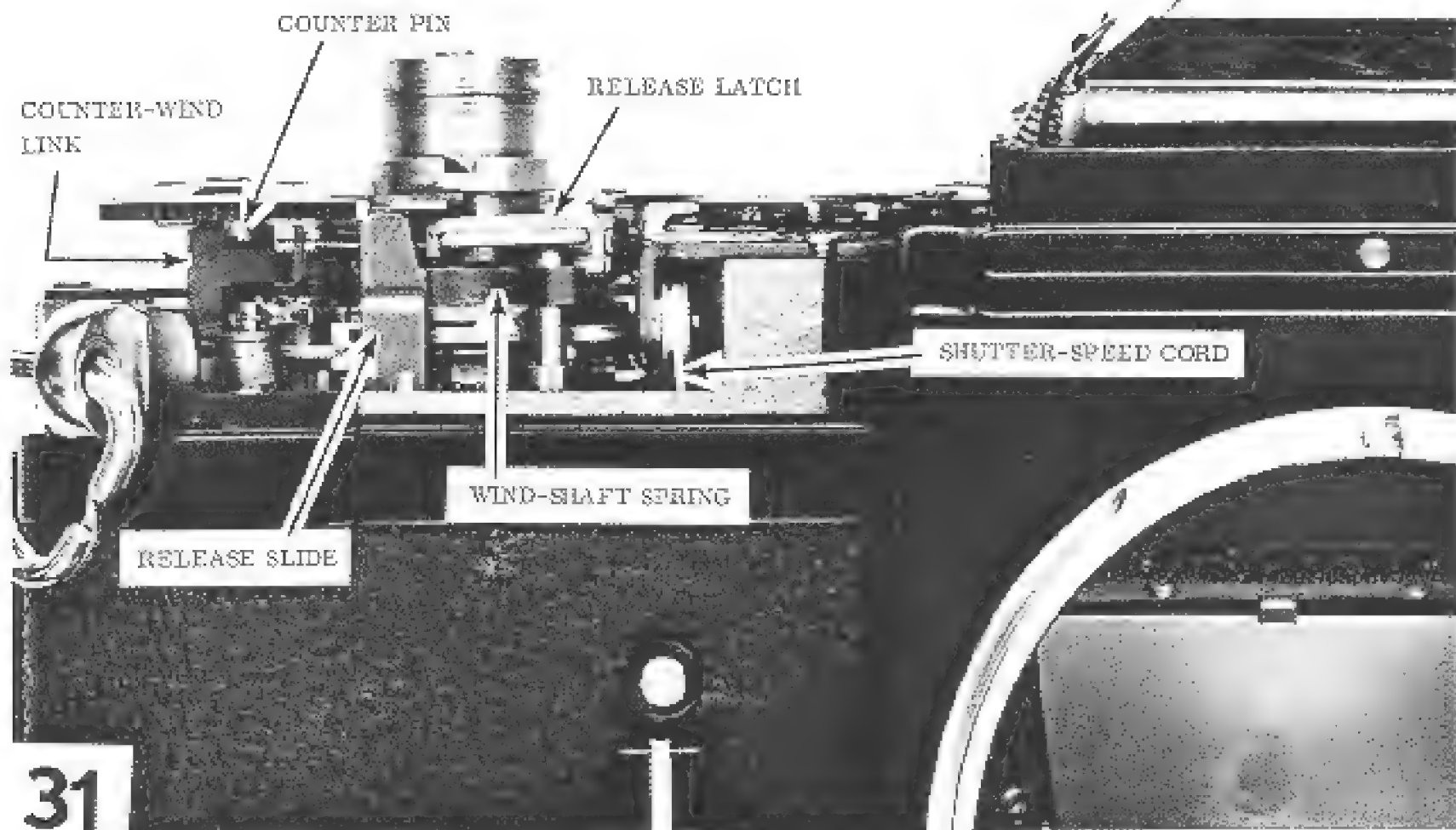
SPACE BETWEEN SWITCH  
BLADES SHOULD BE 0.4 - 0.6 mm

SPRING  
LEVER

ON-OFF  
SWITCH SW1

SPRING-LEVER ECCENTRIC

30

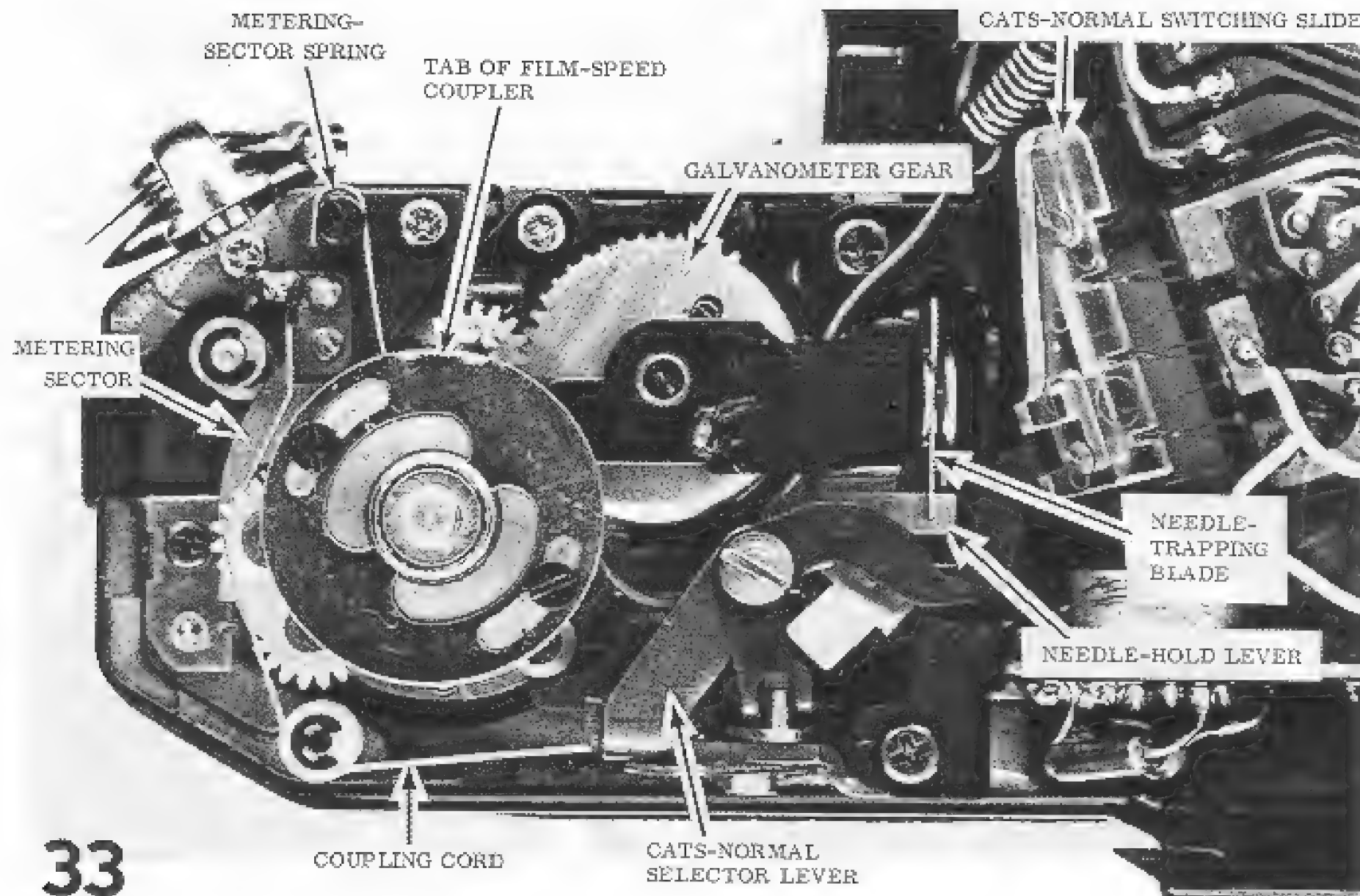


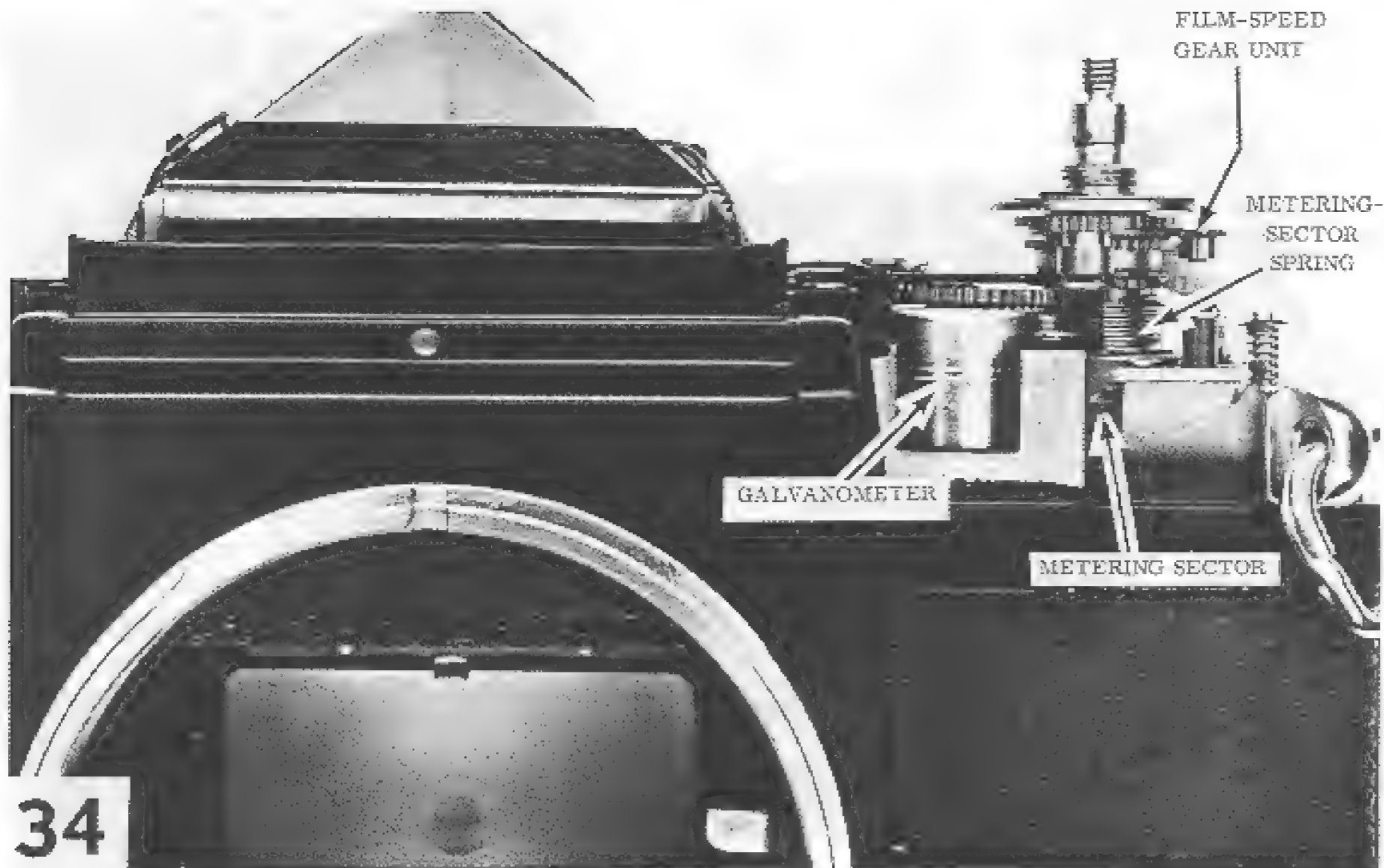
REPLACE WIND-LEVER PARTS TO OPERATE SHUTTER

PUSH WIND-LATCH TAB TO THE LEFT TO  
DISENGAGE WIND-SHAFT COUPLING RING AND  
COCK SHUTTER -- TO RELEASE SHUTTER,  
PUSH DOWN RELEASE SLIDE

DOUBLE-EXPOSURE LEVER



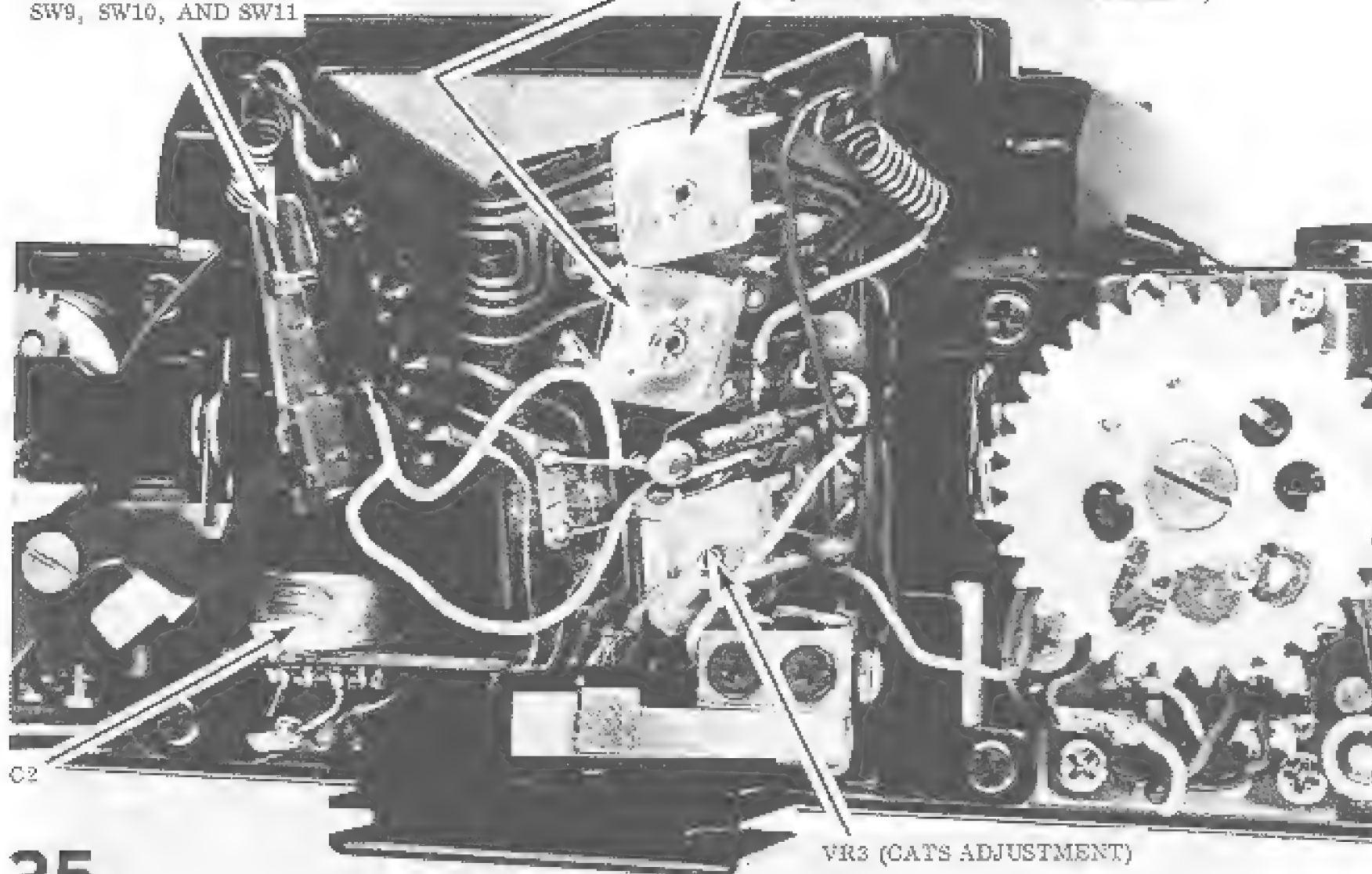




CATS-NORMAL SWITCHES  
SW9, SW10, AND SW11

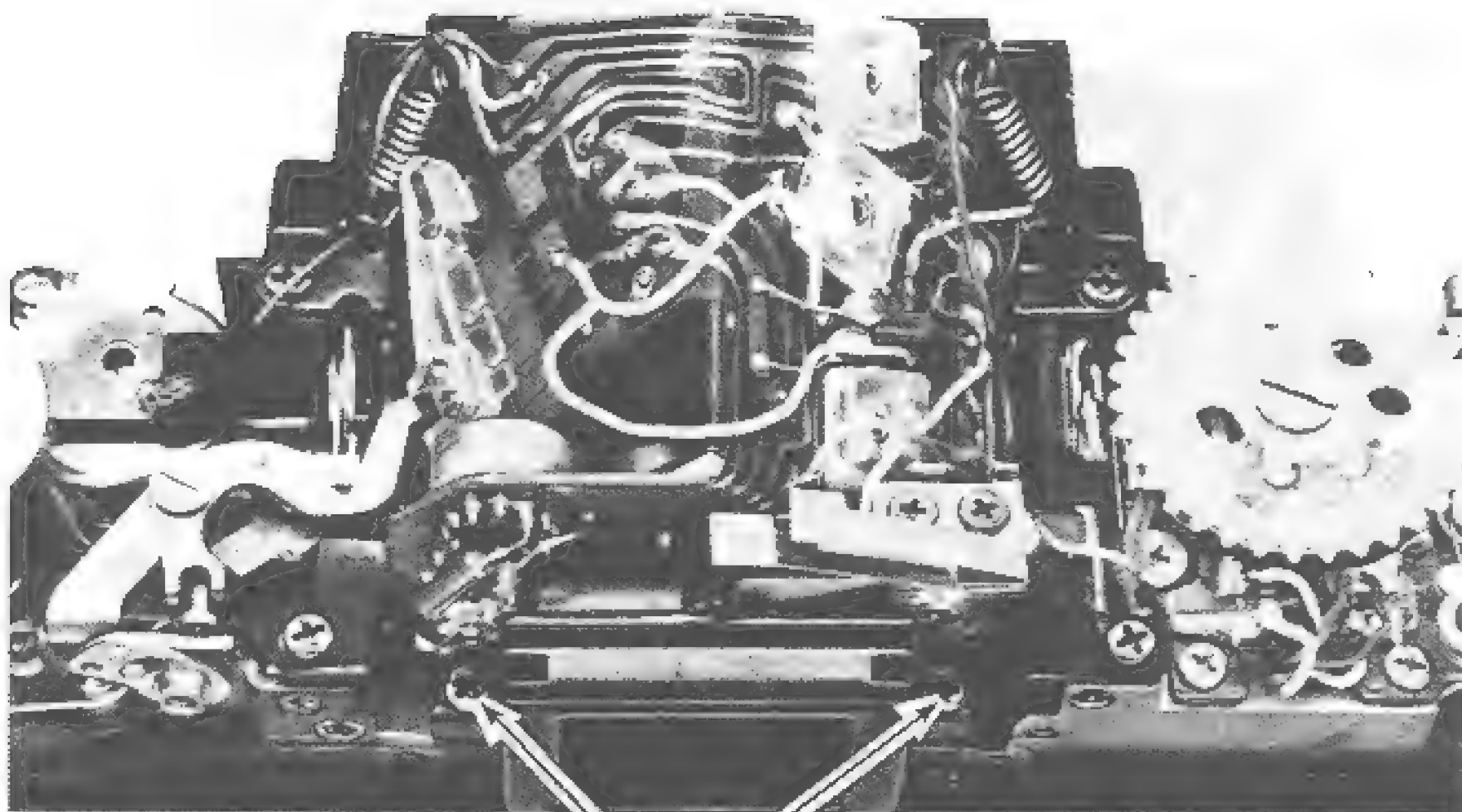
VR4 (METER RESPONSE ADJUSTMENT)

VR2 (METER LINEARITY ADJUSTMENT)

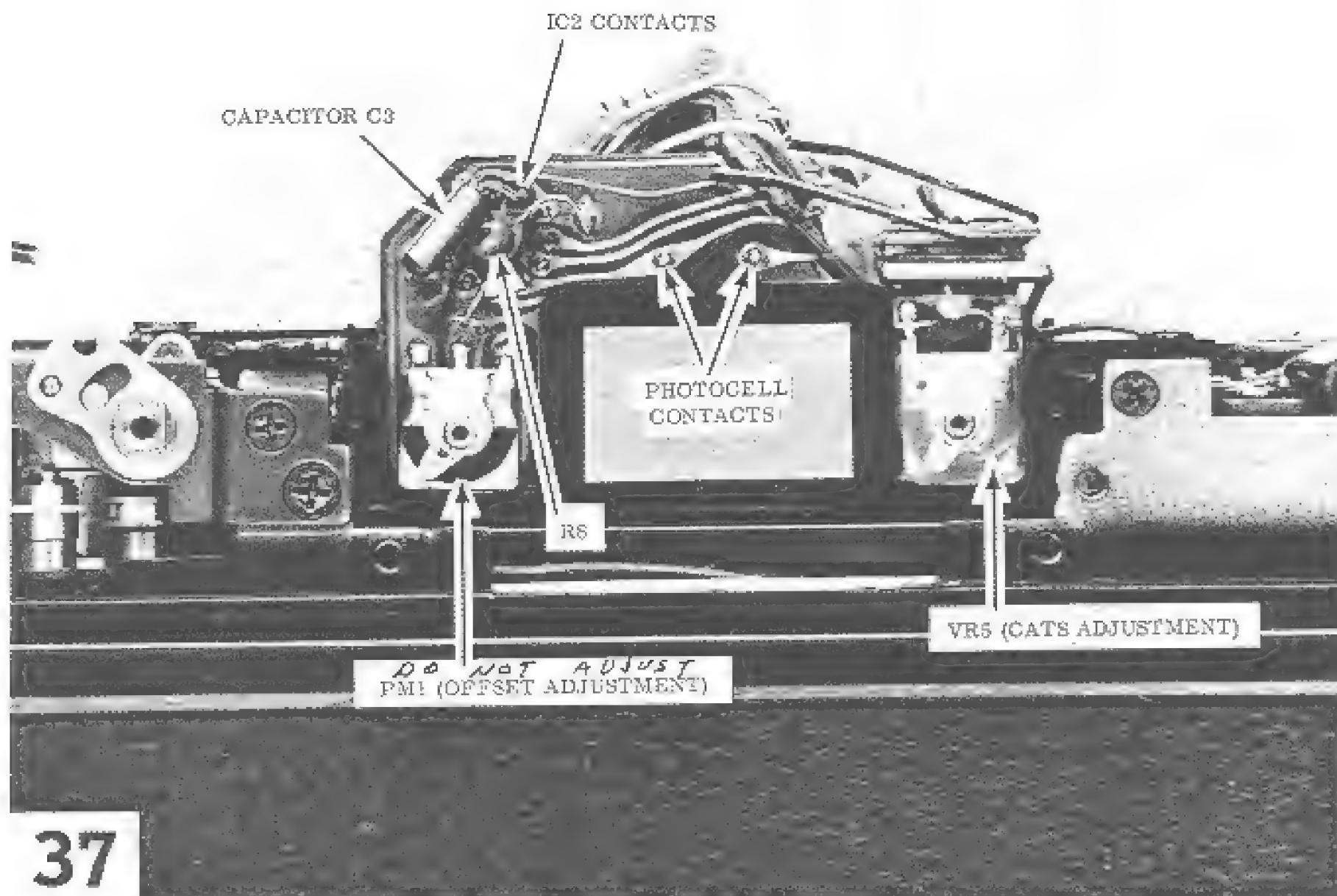


C2

VR3 (CATS ADJUSTMENT)



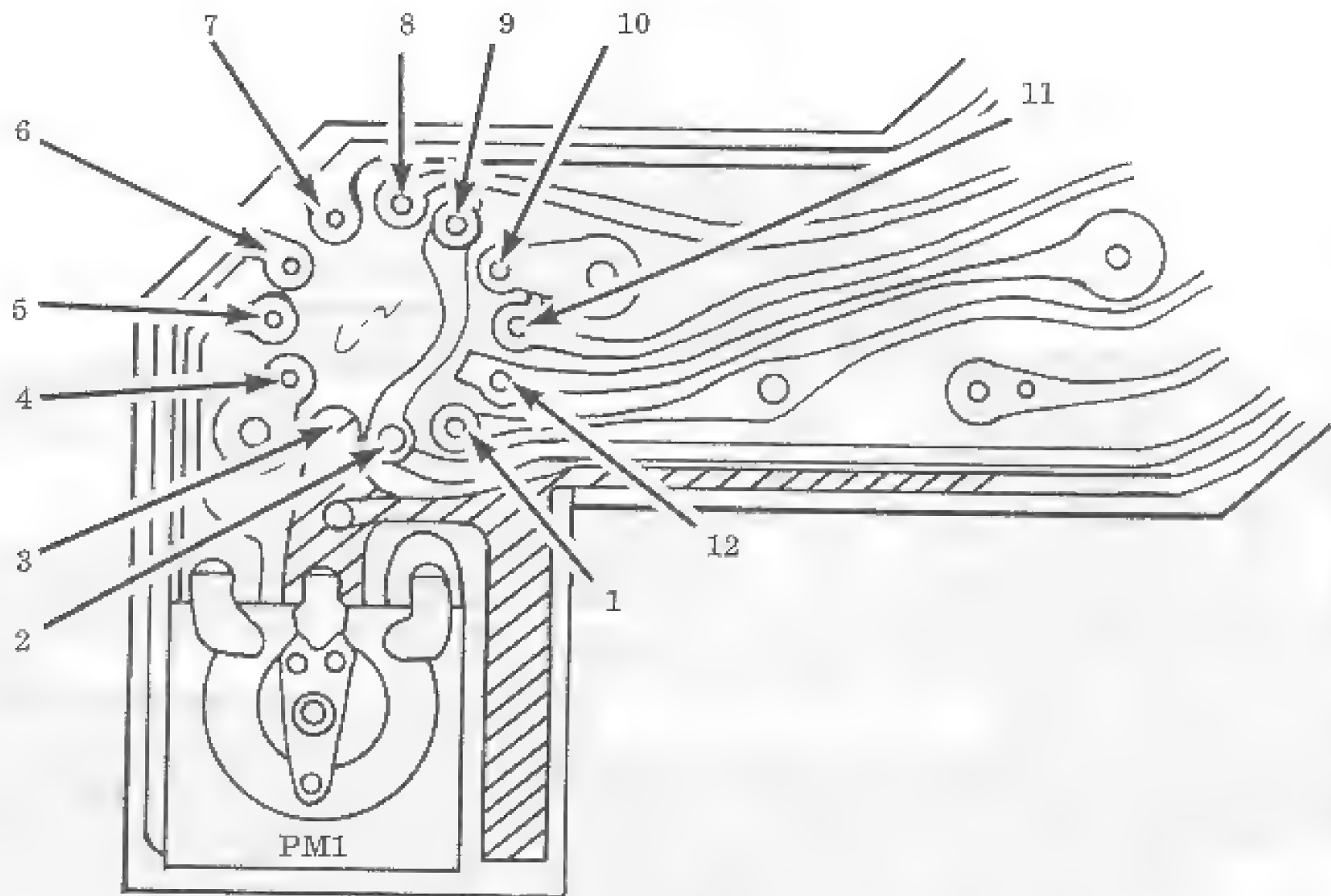
REMOVE TWO SCREWS AND LIFT OUT EYELENS



*Photo cells*

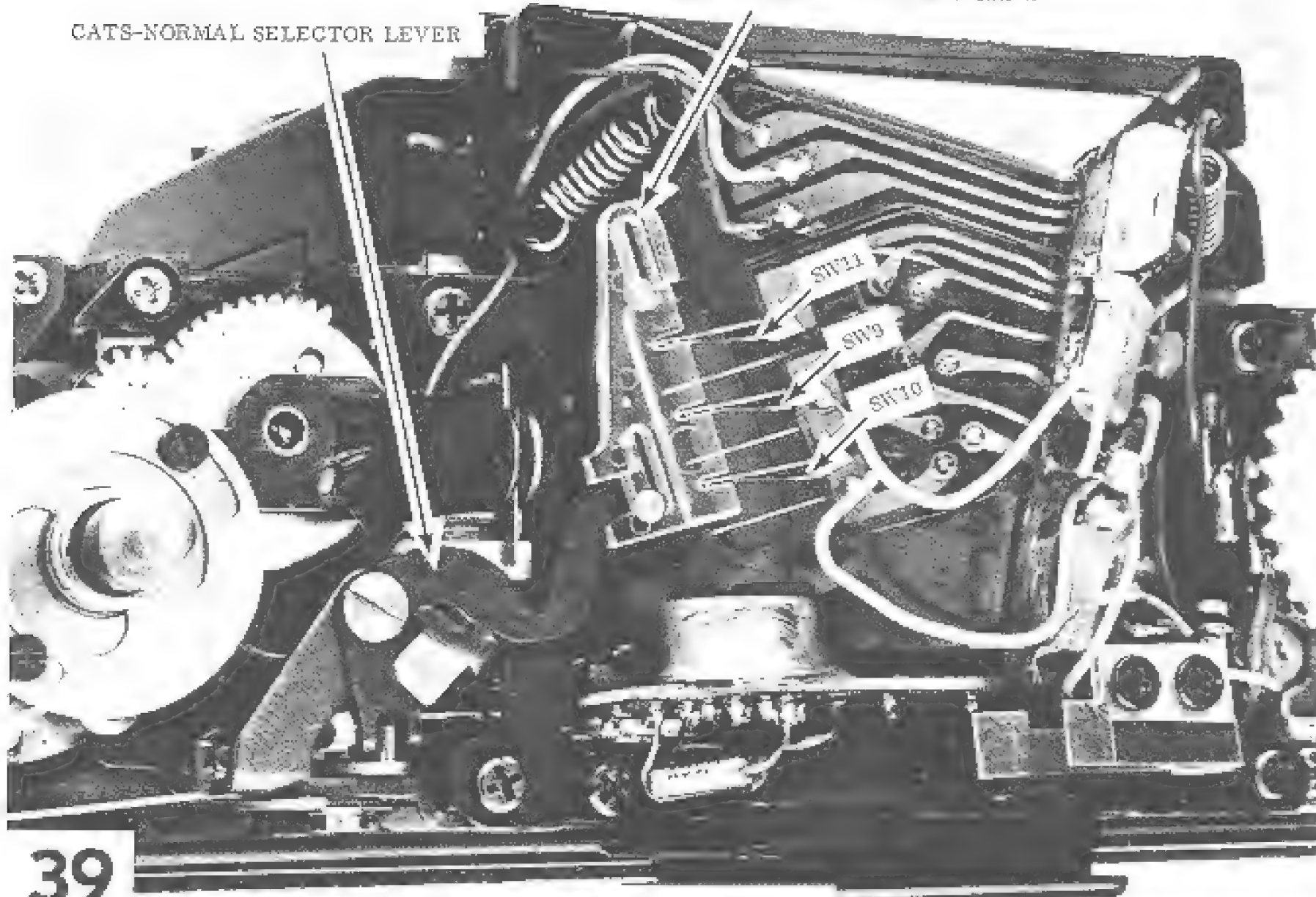






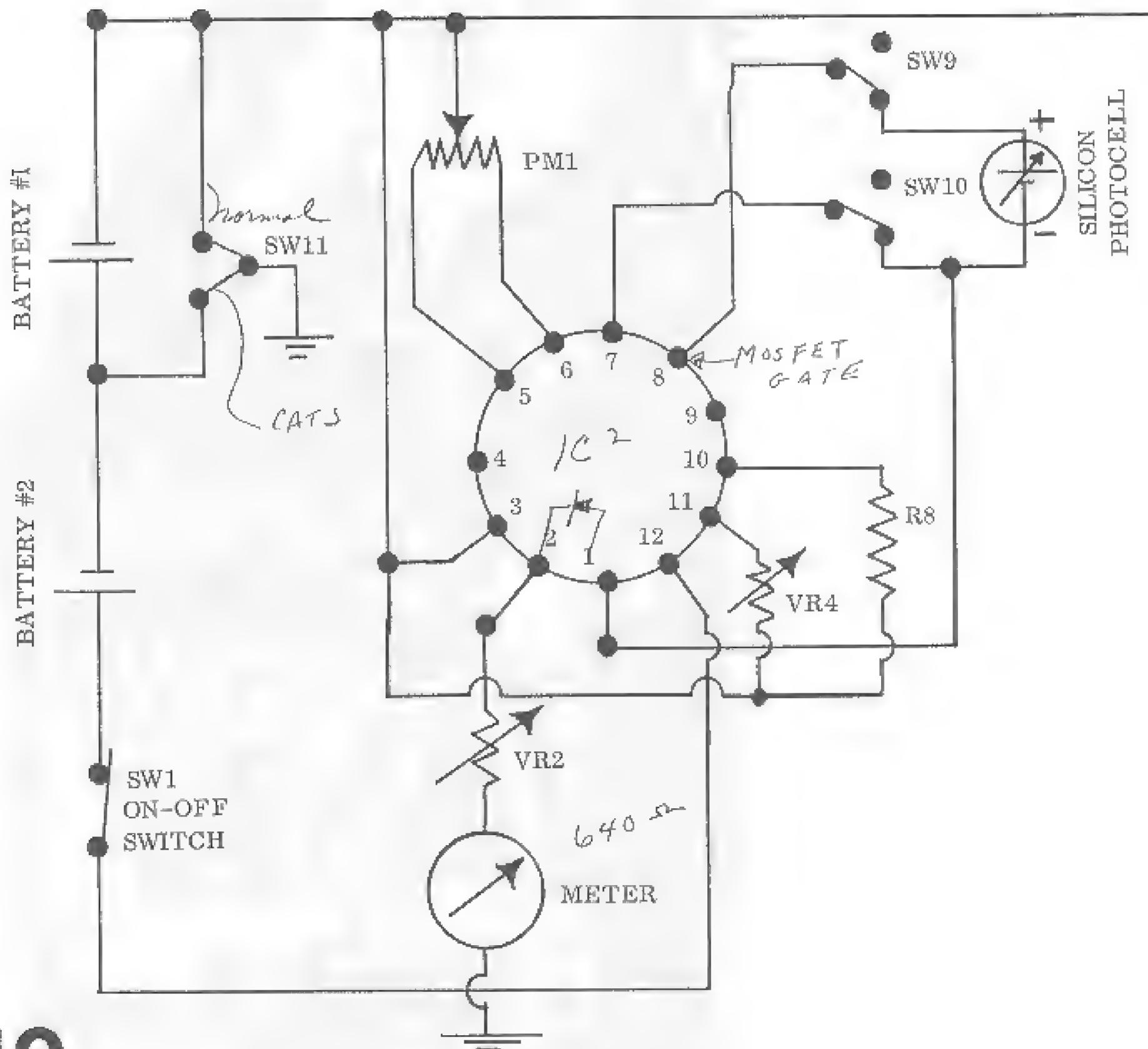
CATS-NORMAL SWITCHING SLIDE

CATS-NORMAL SELECTOR LEVER

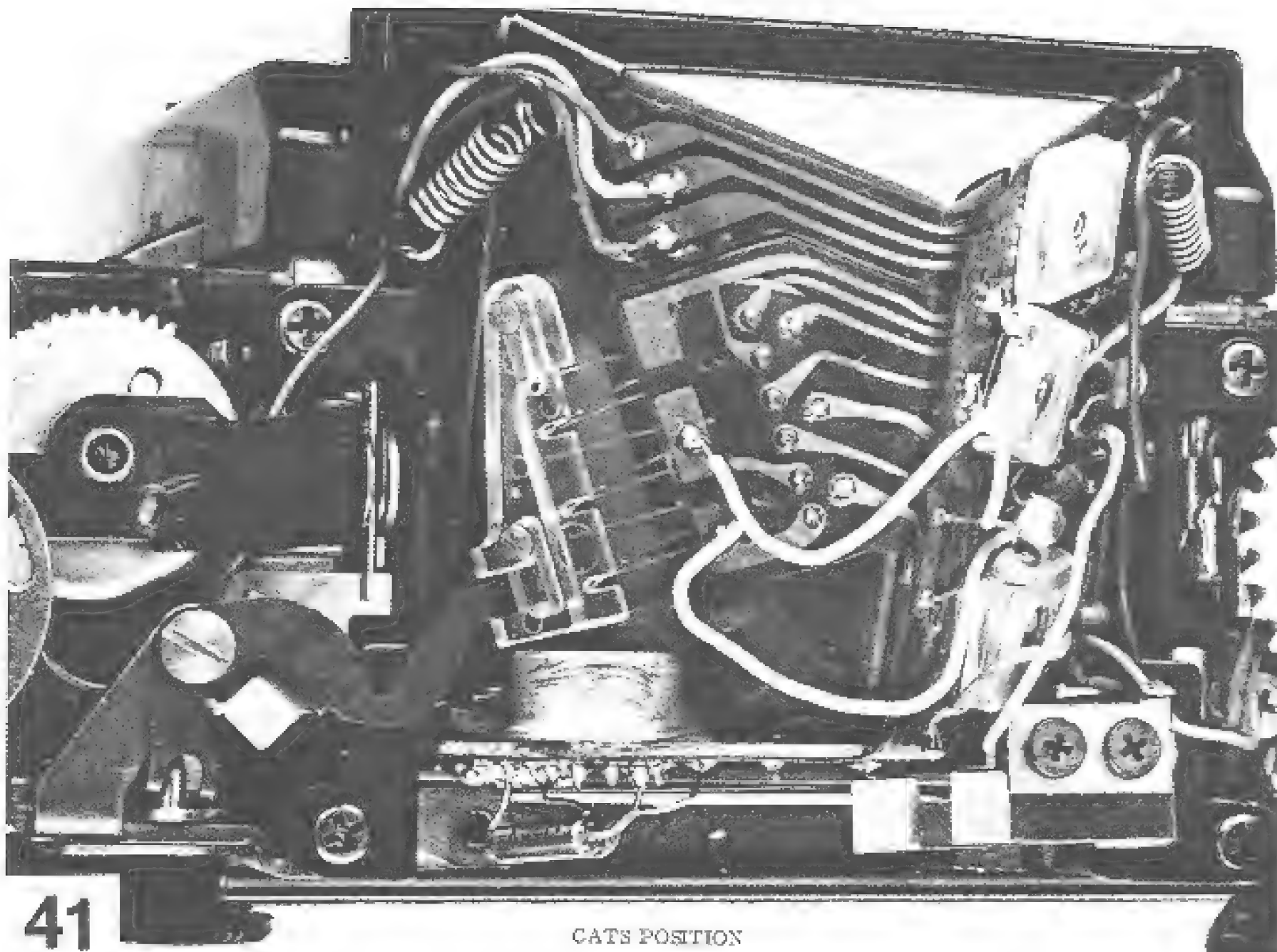


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"NORMAL" POSITION



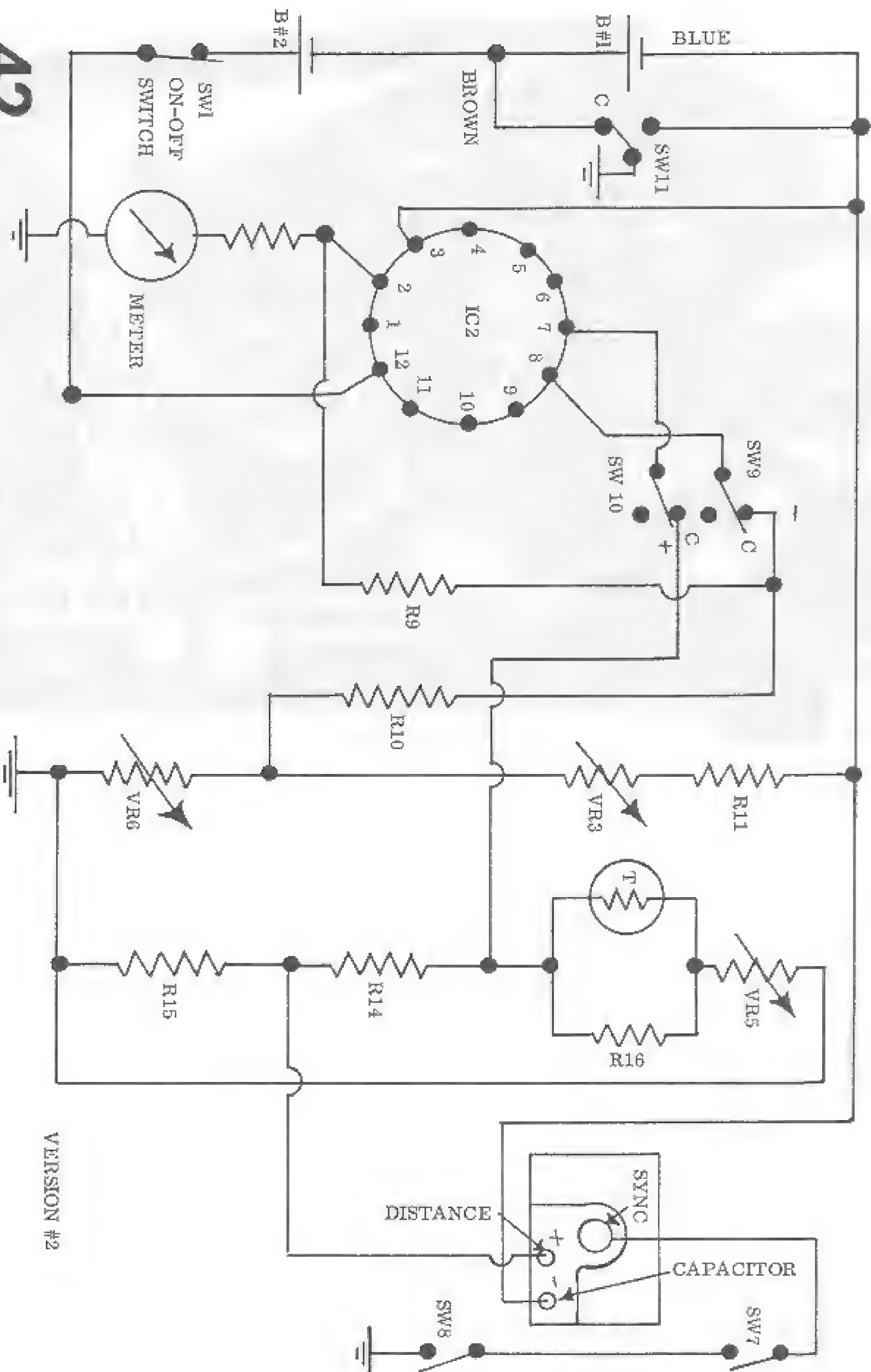
EXPOSURE-METER CIRCUIT



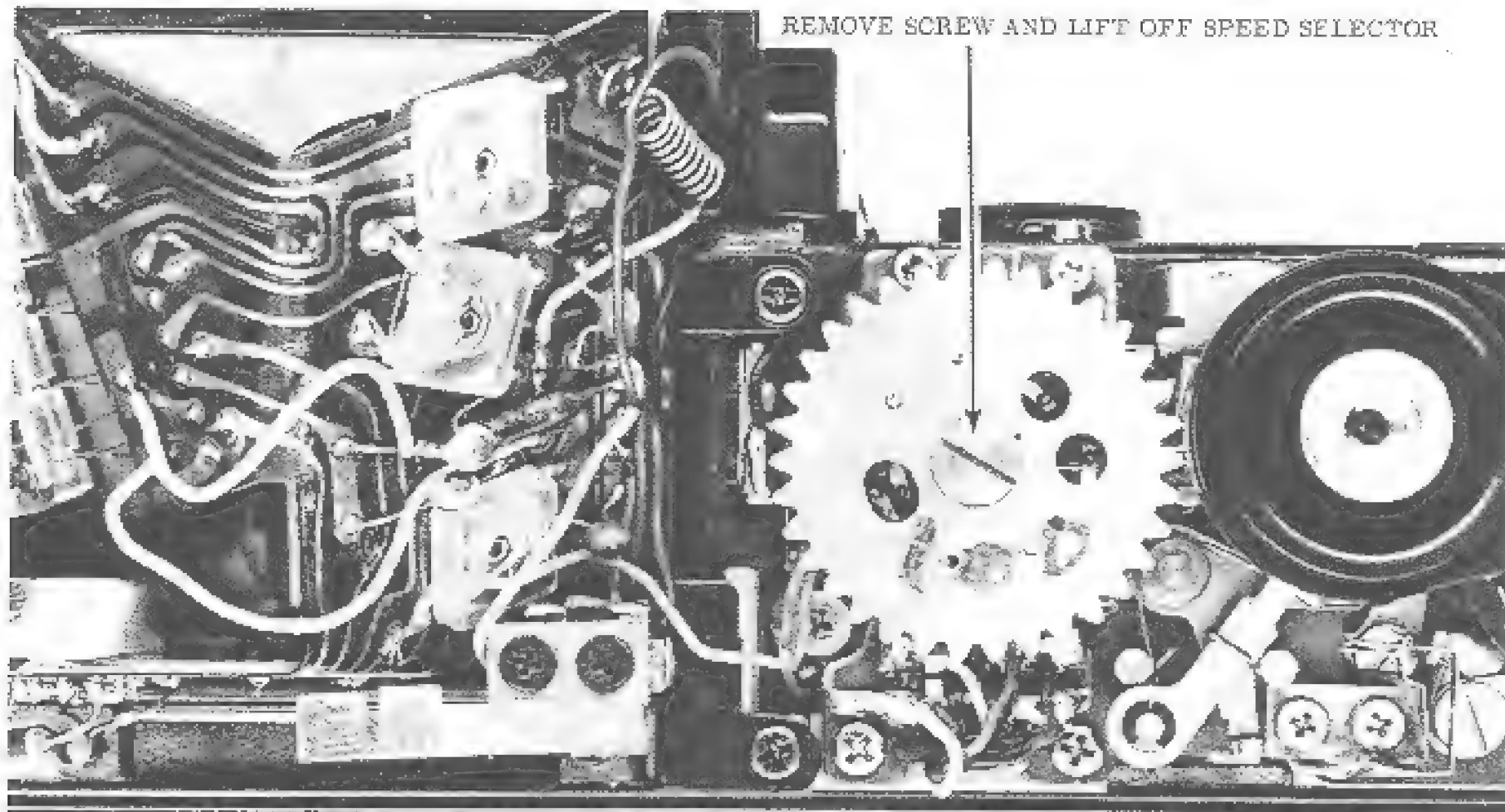
41

CATS POSITION

# GATS CIRCUIT

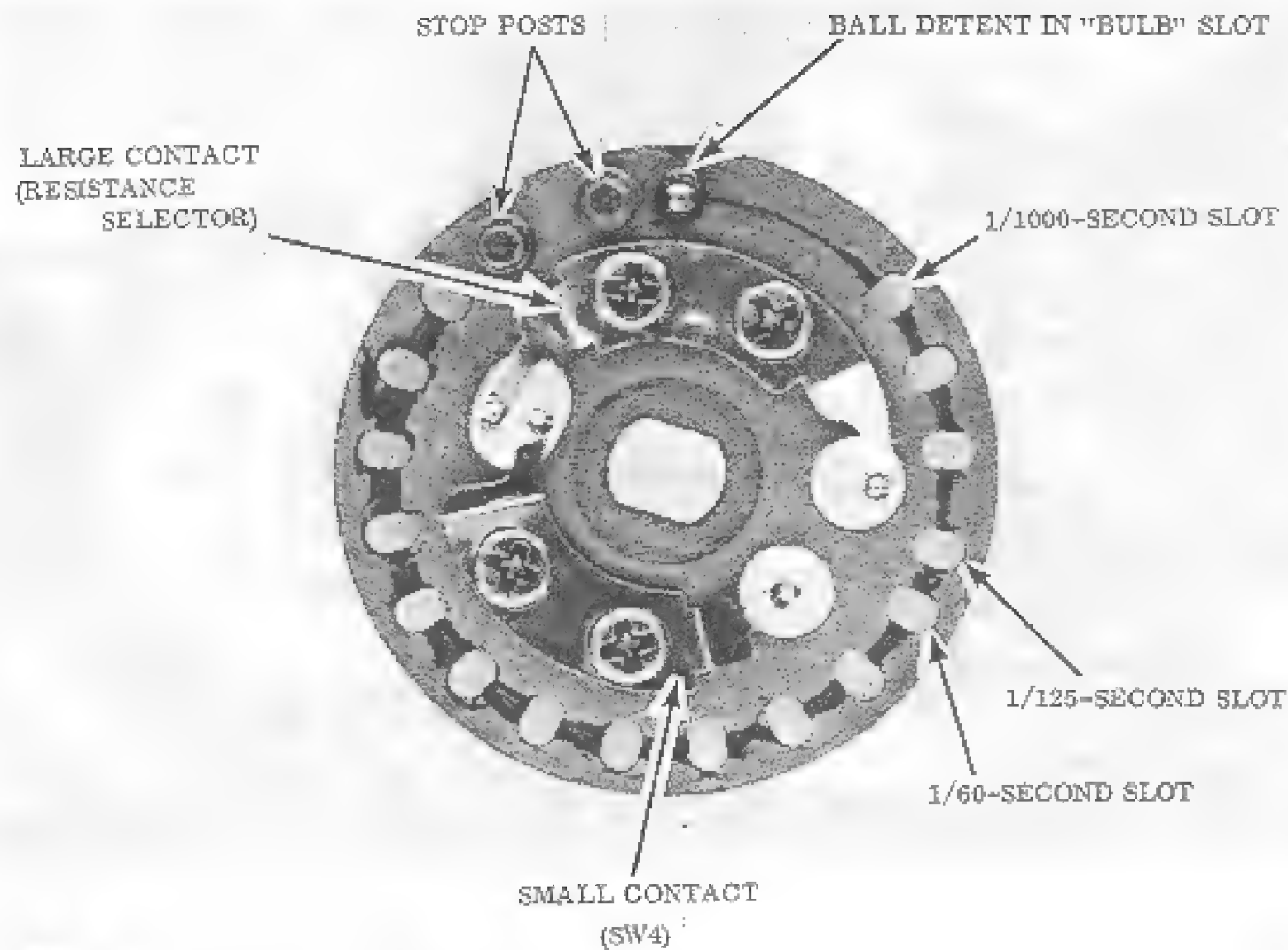


REMOVE SCREW AND LIFT OFF SPEED SELECTOR



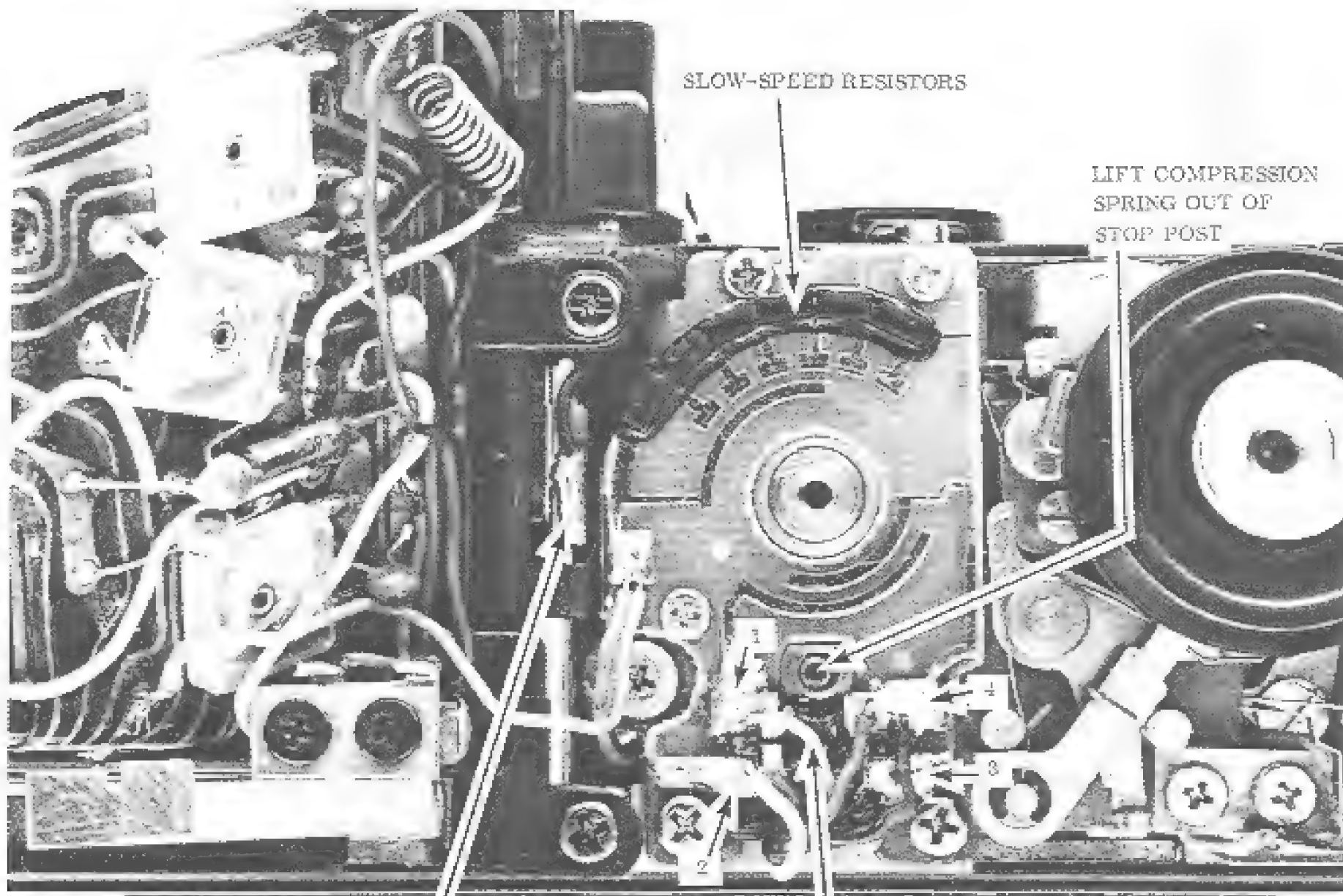
CAUTION: SPEED-SELECTOR BALL DETENT  
WILL BE LOOSE WHEN YOU LIFT OFF SPEED  
SELECTOR





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UNDERSIDE OF SPEED SELECTOR



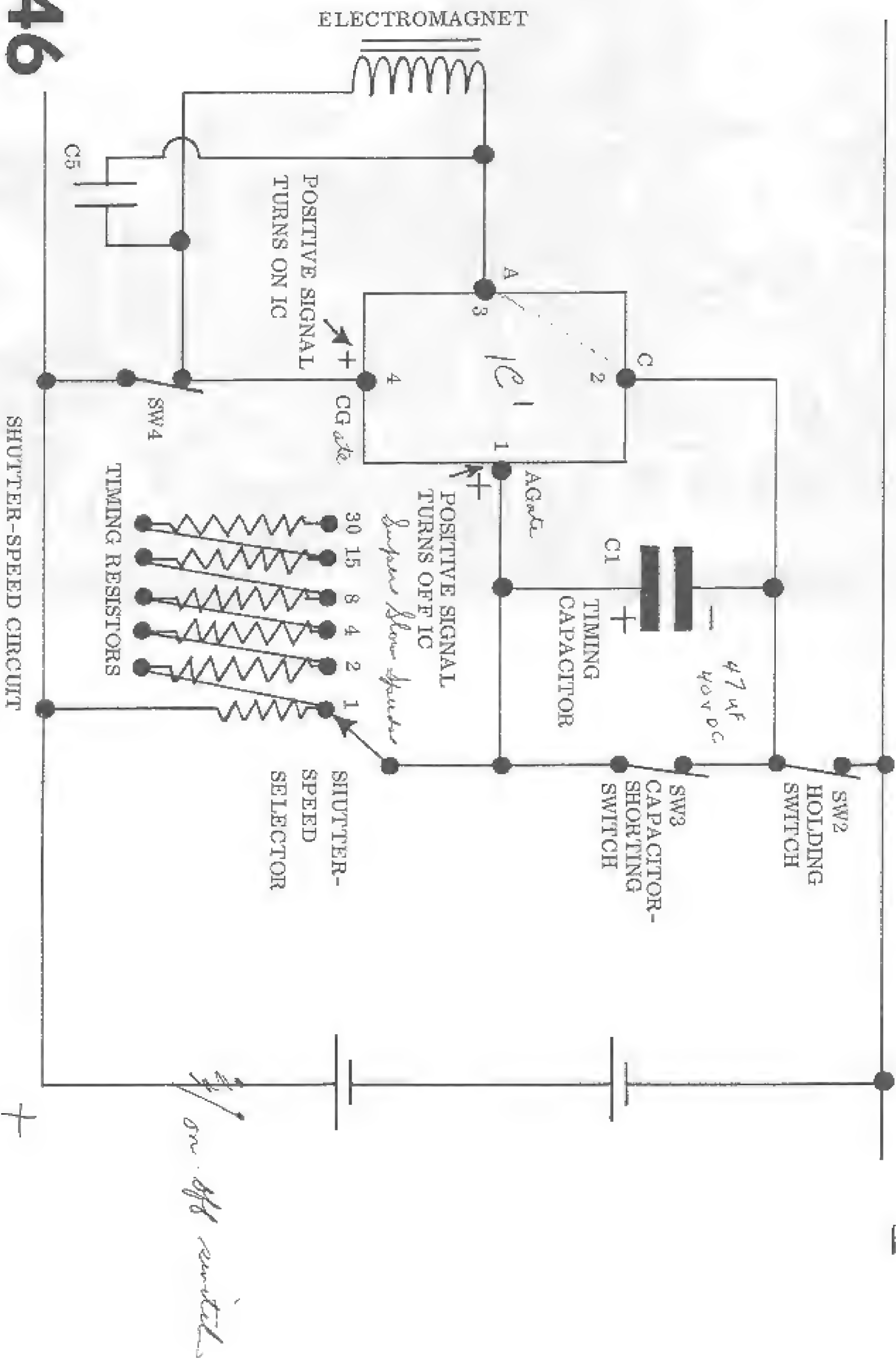
SLOW-SPEED RESISTORS

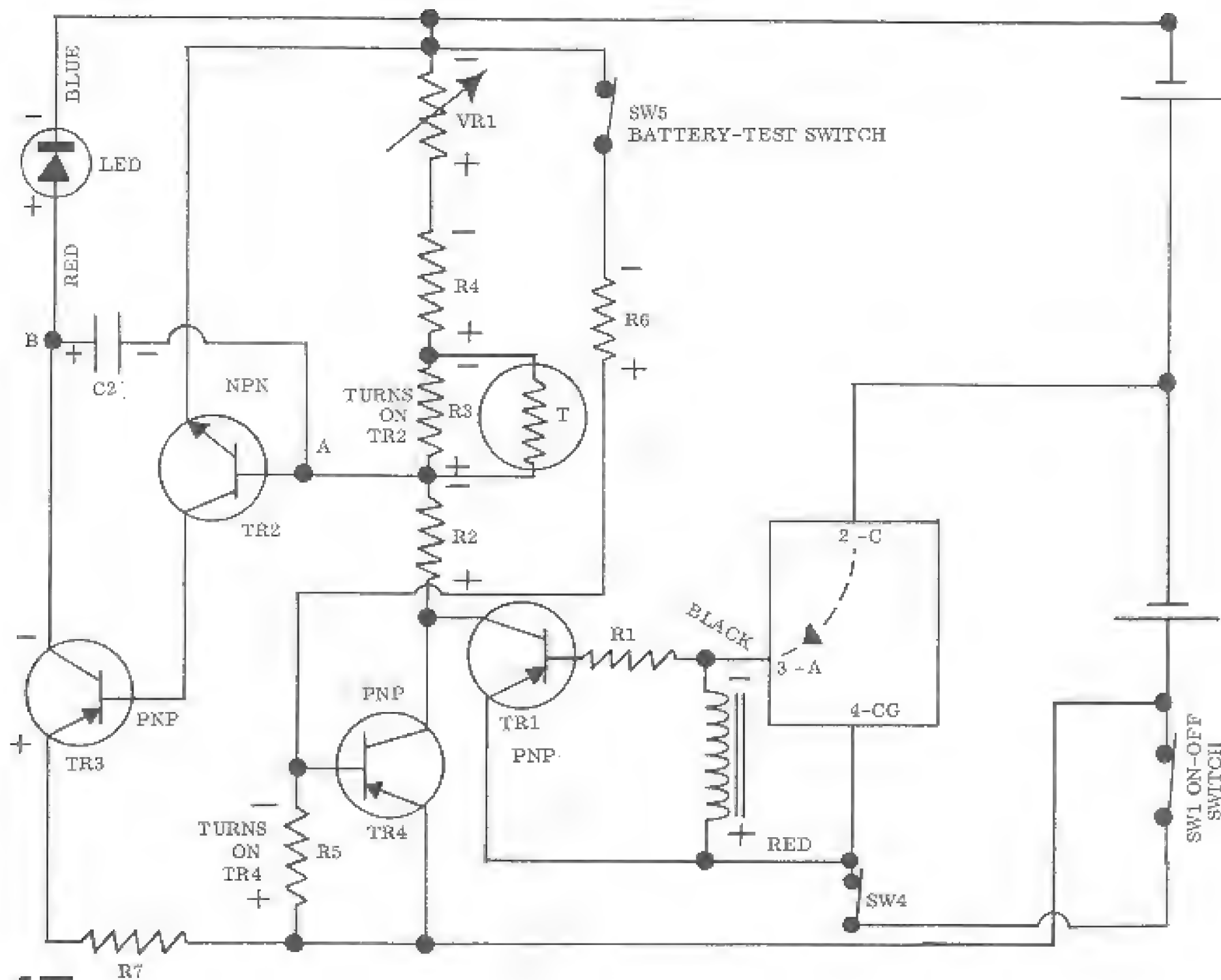
LIFT COMPRESSION  
SPRING OUT OF  
STOP POST

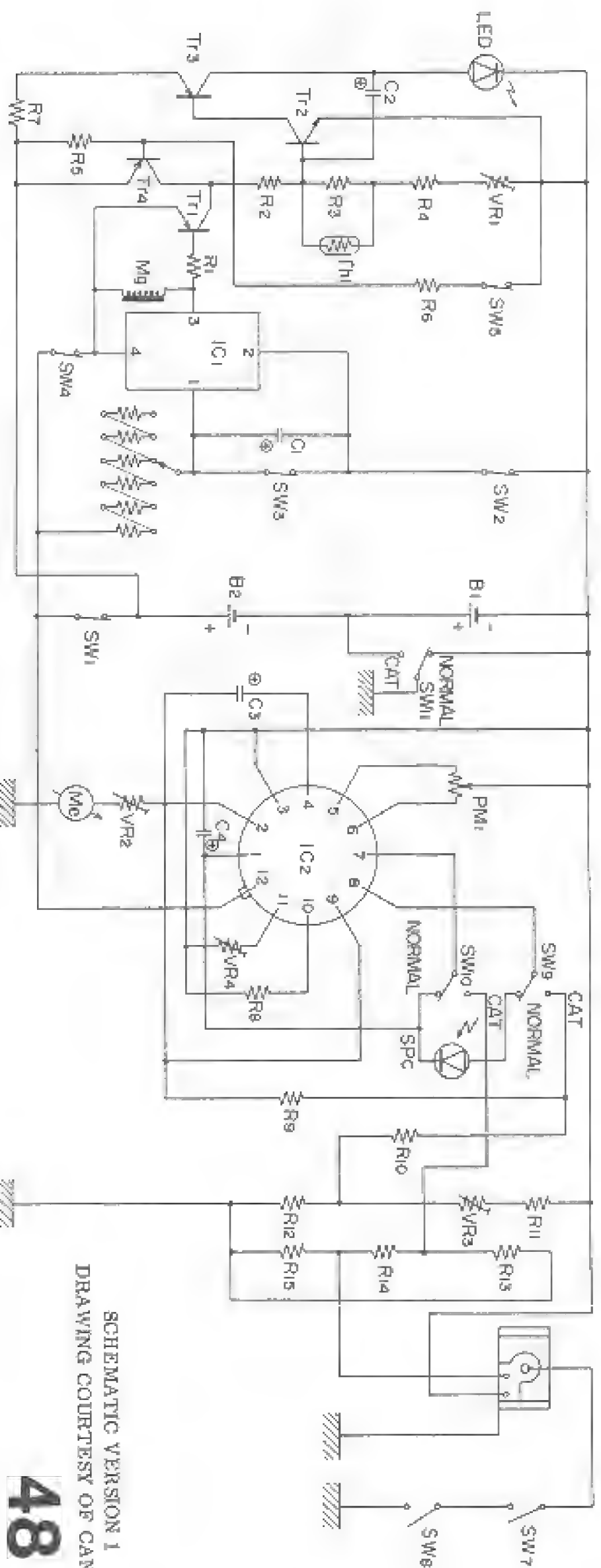
HOLDING SWITCH SW2

IC1

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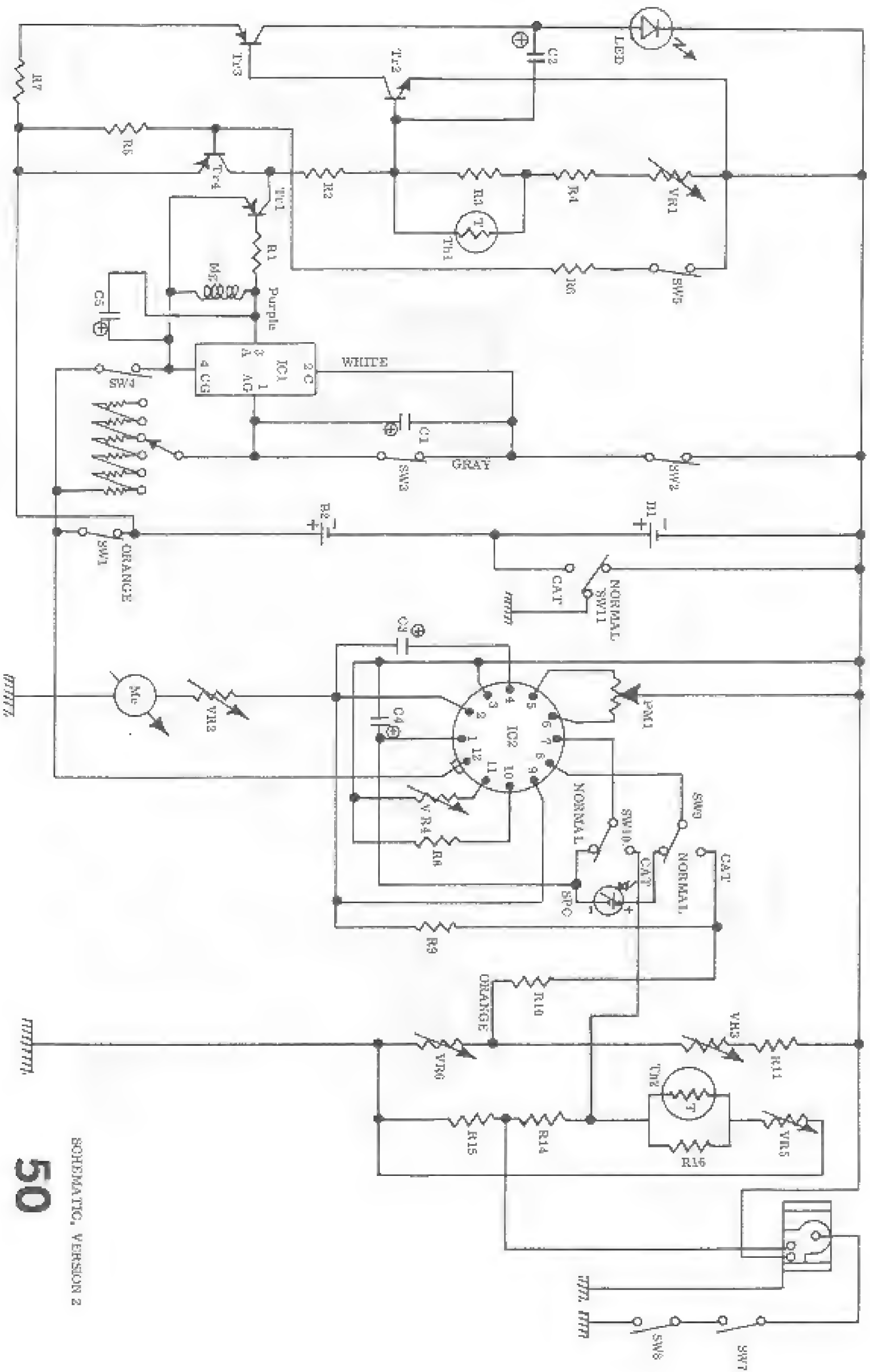


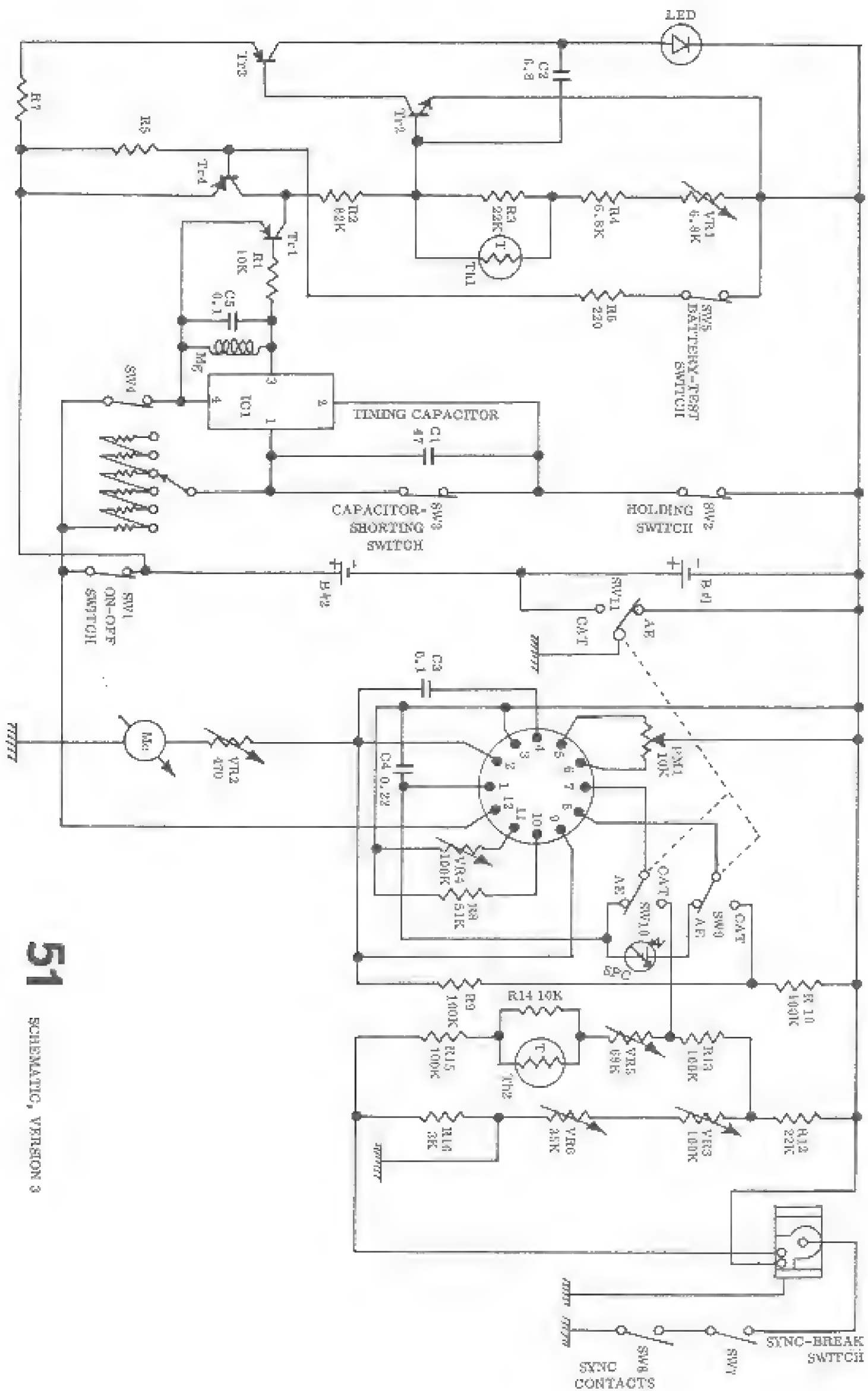


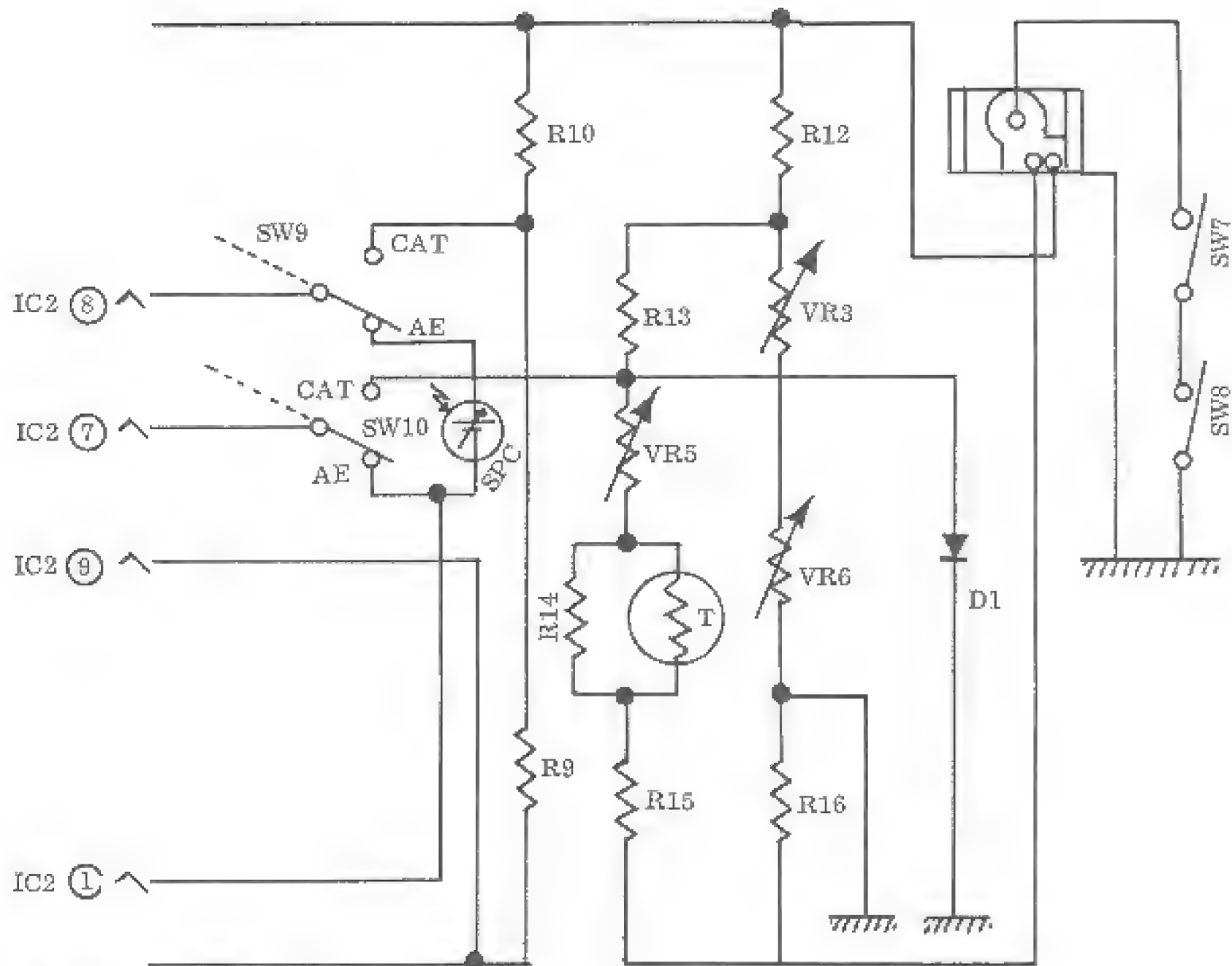
SCHEMATIC VERSION 1  
DRAWING COURTESY OF CANON











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VERSION 4

VERSION #2 MODIFIED TO VERSION #4

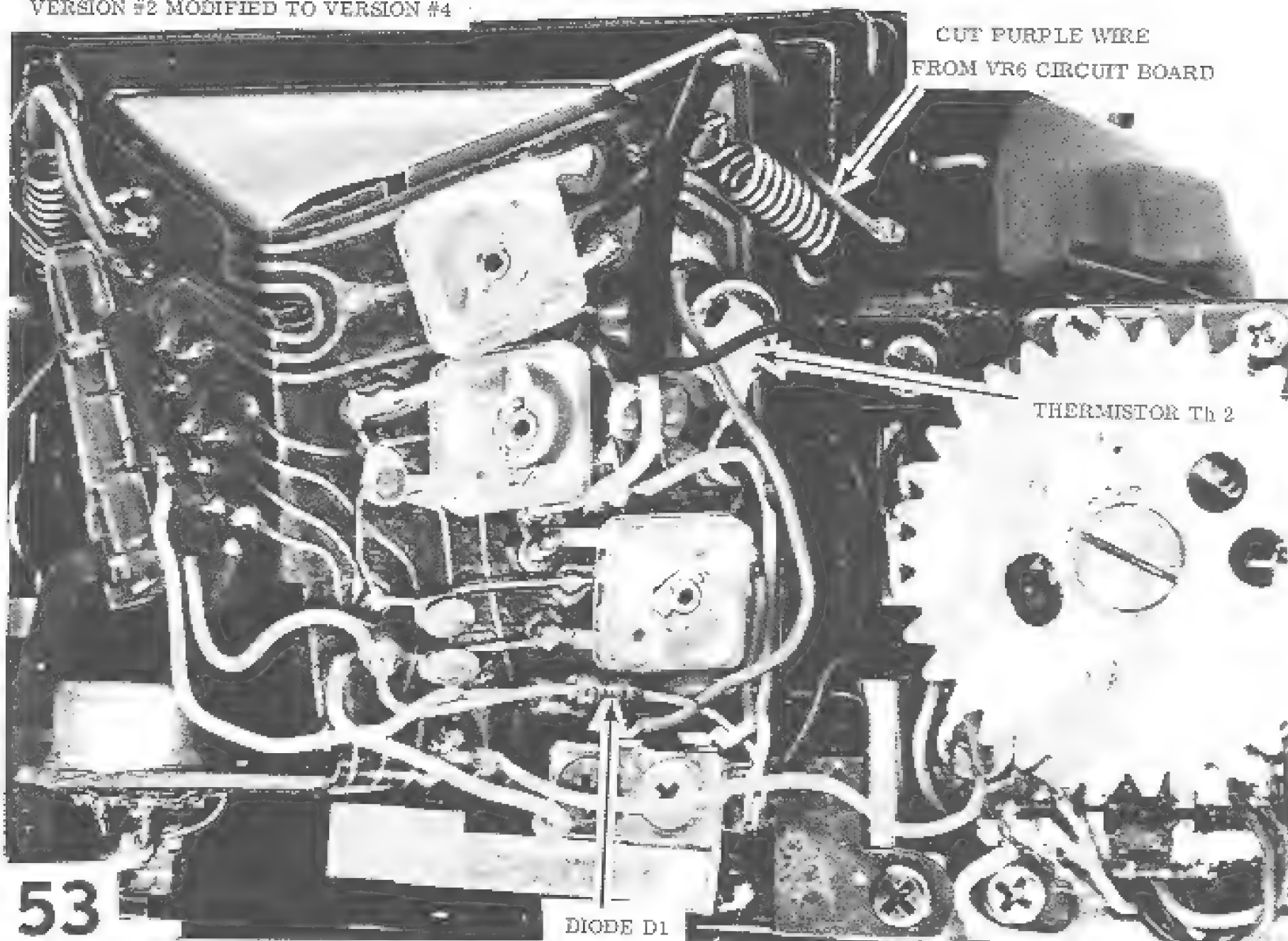
CUT PURPLE WIRE  
FROM VR6 CIRCUIT BOARD

THERMISTOR Th 2

DIODE D1

*Reference*

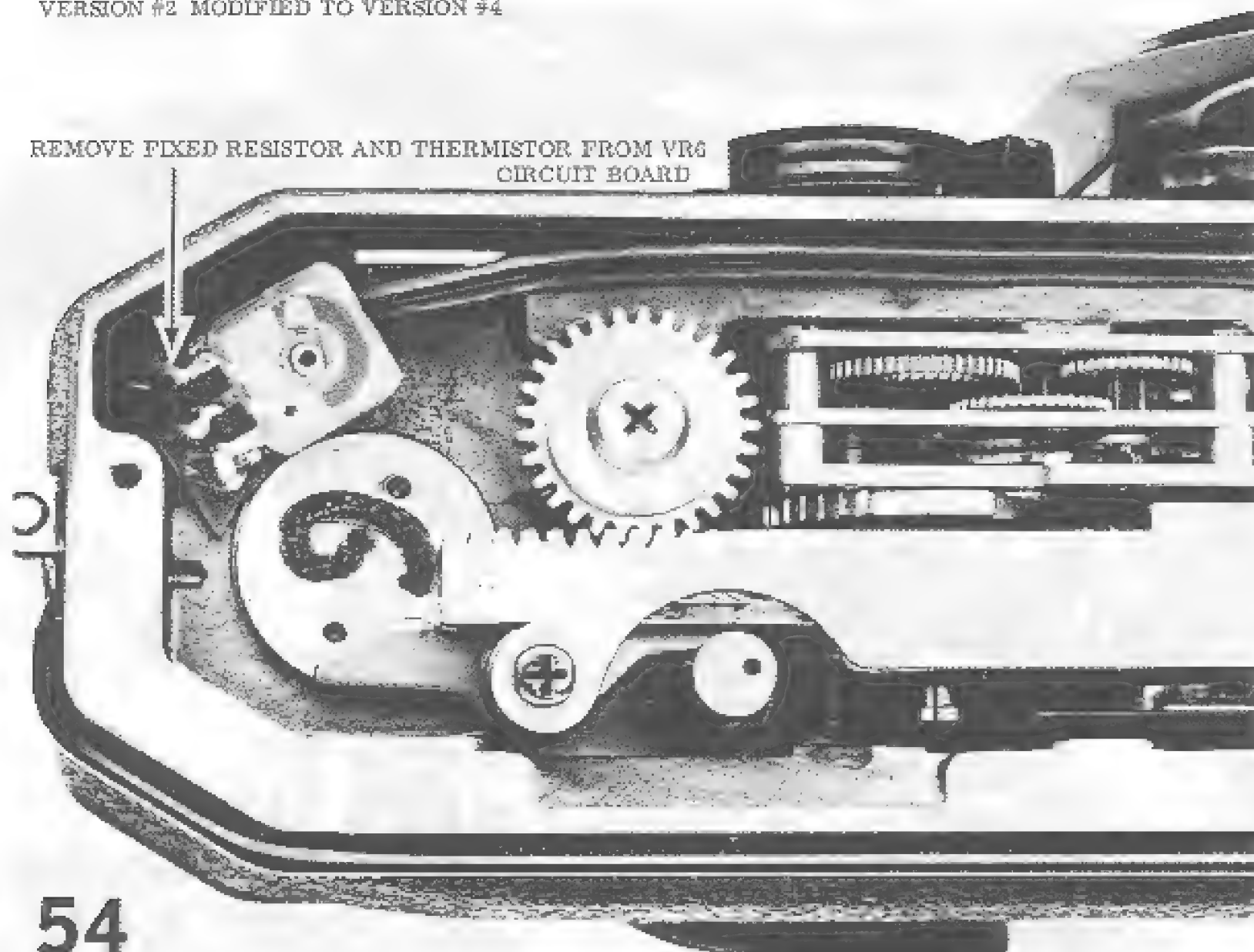
53



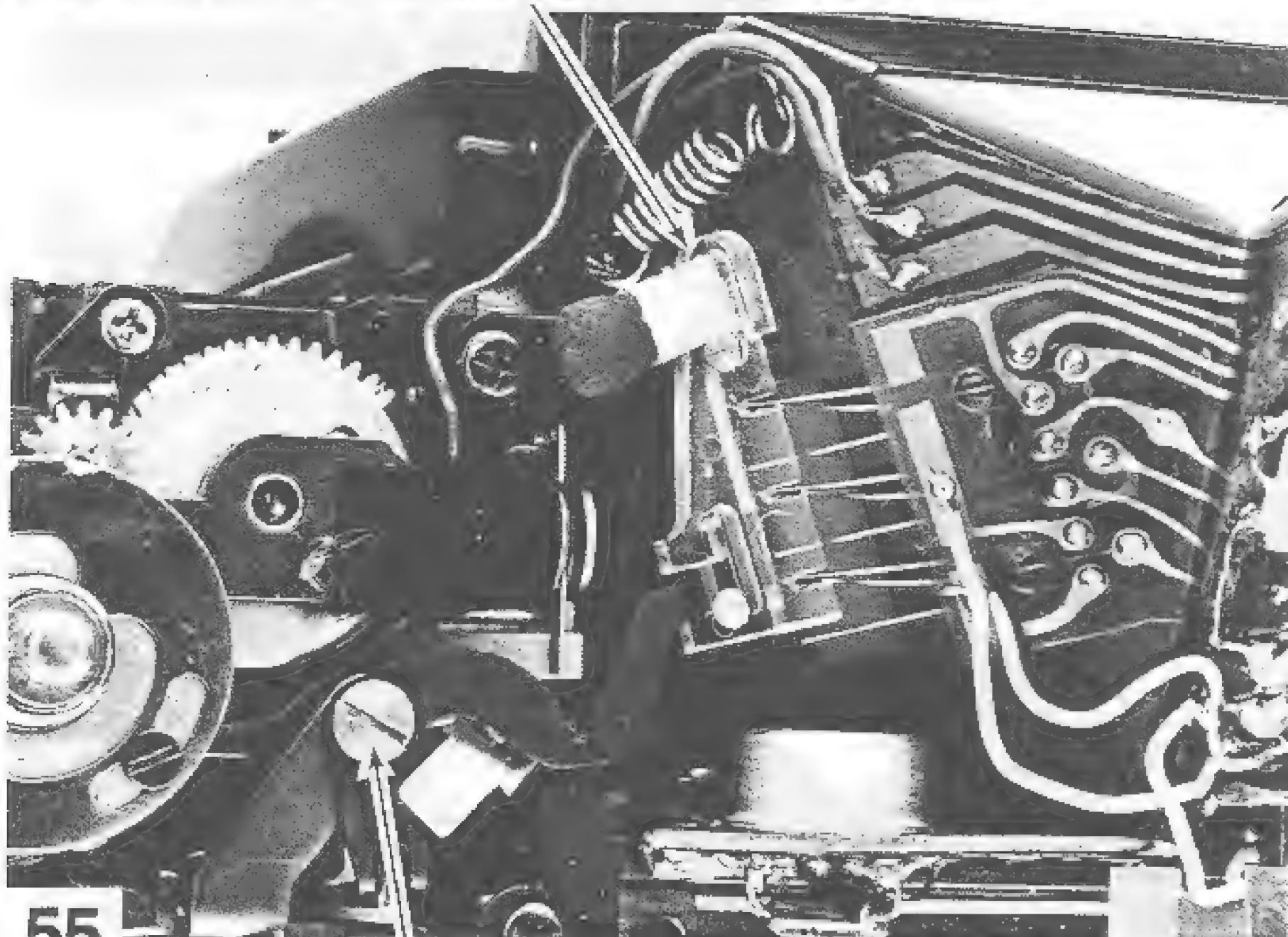
VERSION #2 MODIFIED TO VERSION #4

REMOVE FIXED RESISTOR AND THERMISTOR FROM VR6  
CIRCUIT BOARD

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1. WEDGE CATS-NORMAL SWITCHING SLIDE TO KEEP CATS-NORMAL SWITCHES CLOSED



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2. REMOVE SHOULDER SCREW AND TAKE OUT CATS-NORMAL SELECTOR LEVER

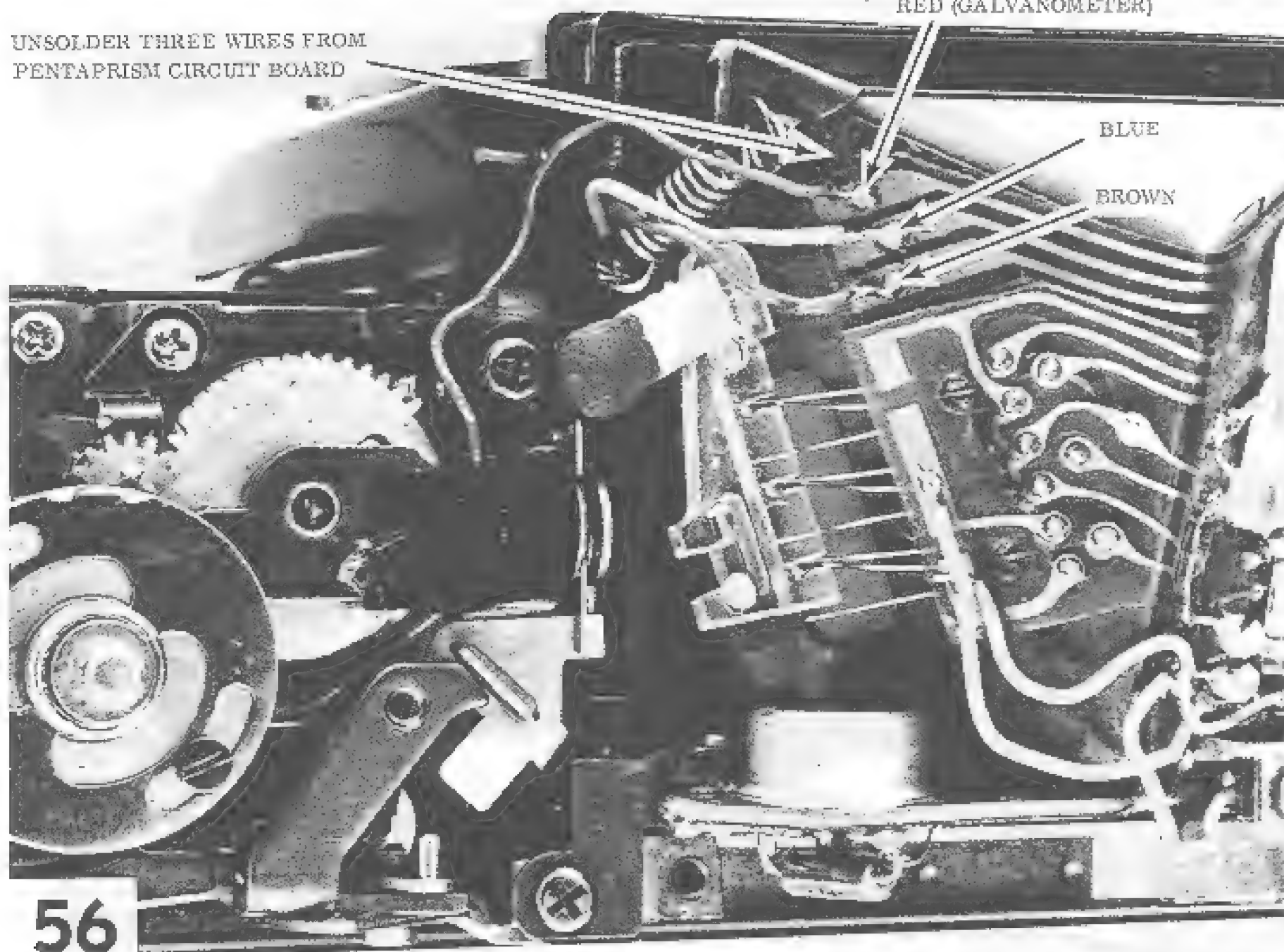


UNSOLDER THREE WIRES FROM  
PENTAPRISM CIRCUIT BOARD

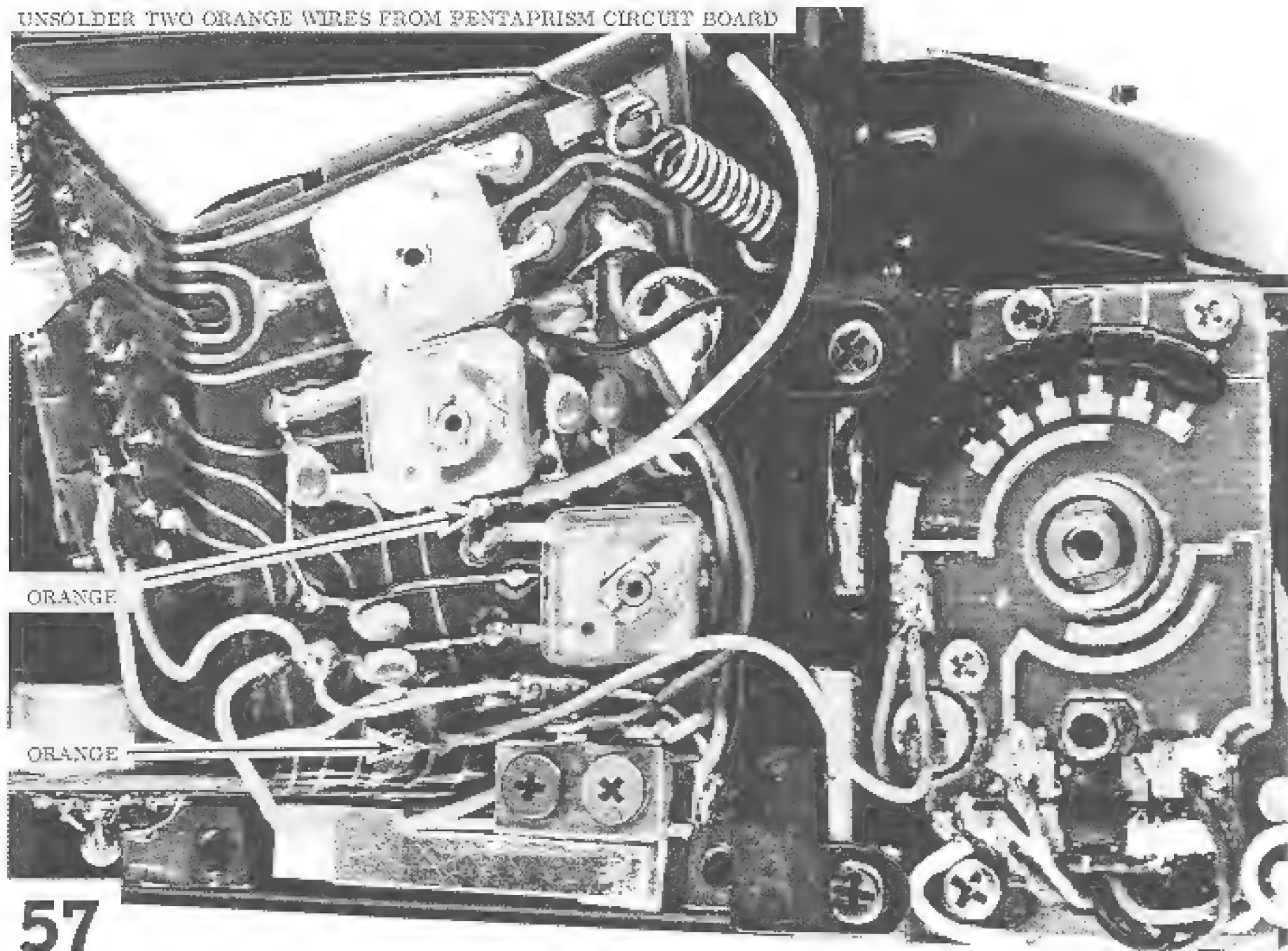
RED (GALVANOMETER)

BLUE

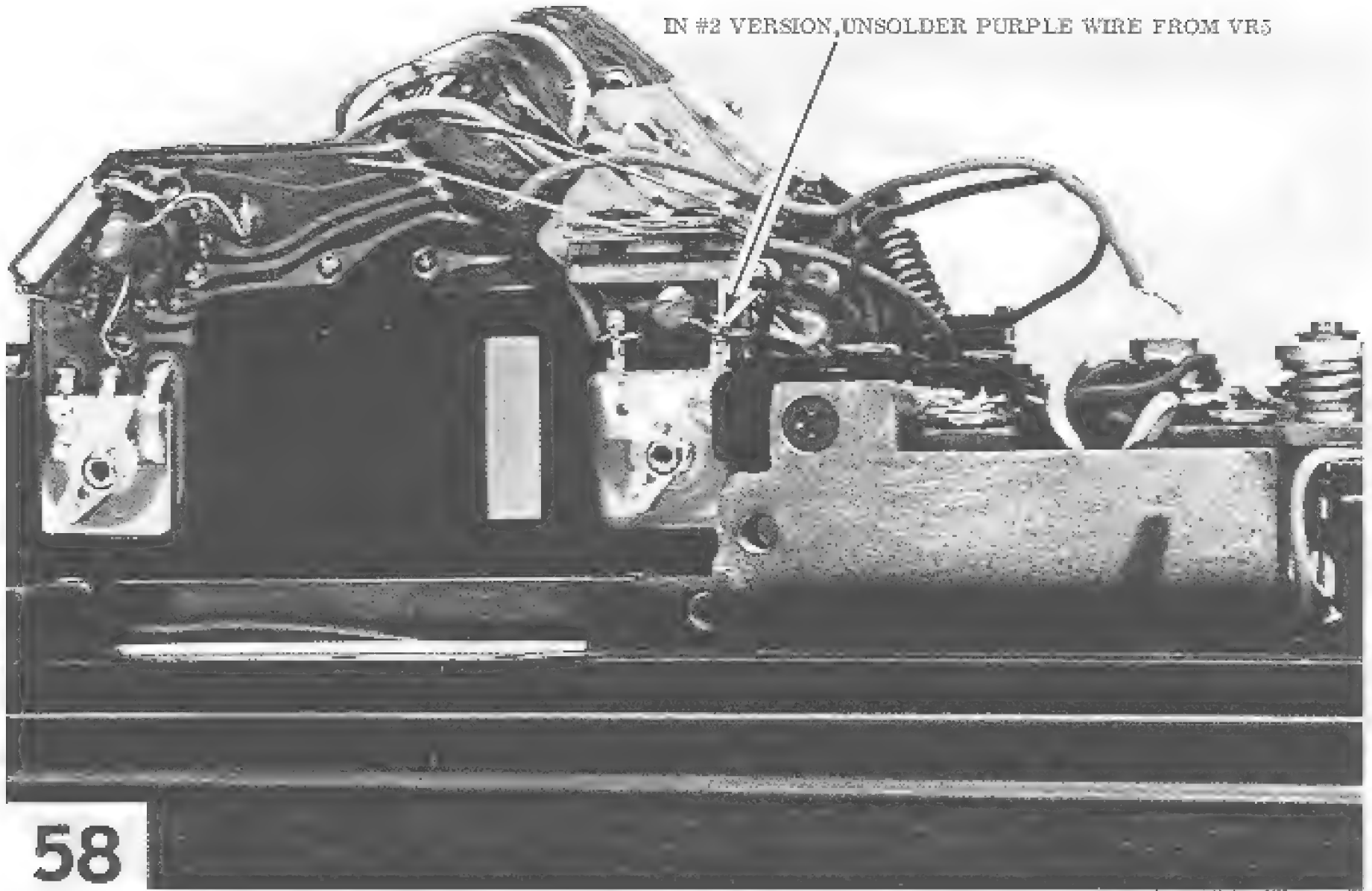
BROWN



UNSOLDER TWO ORANGE WIRES FROM PENTAPRISM CIRCUIT BOARD



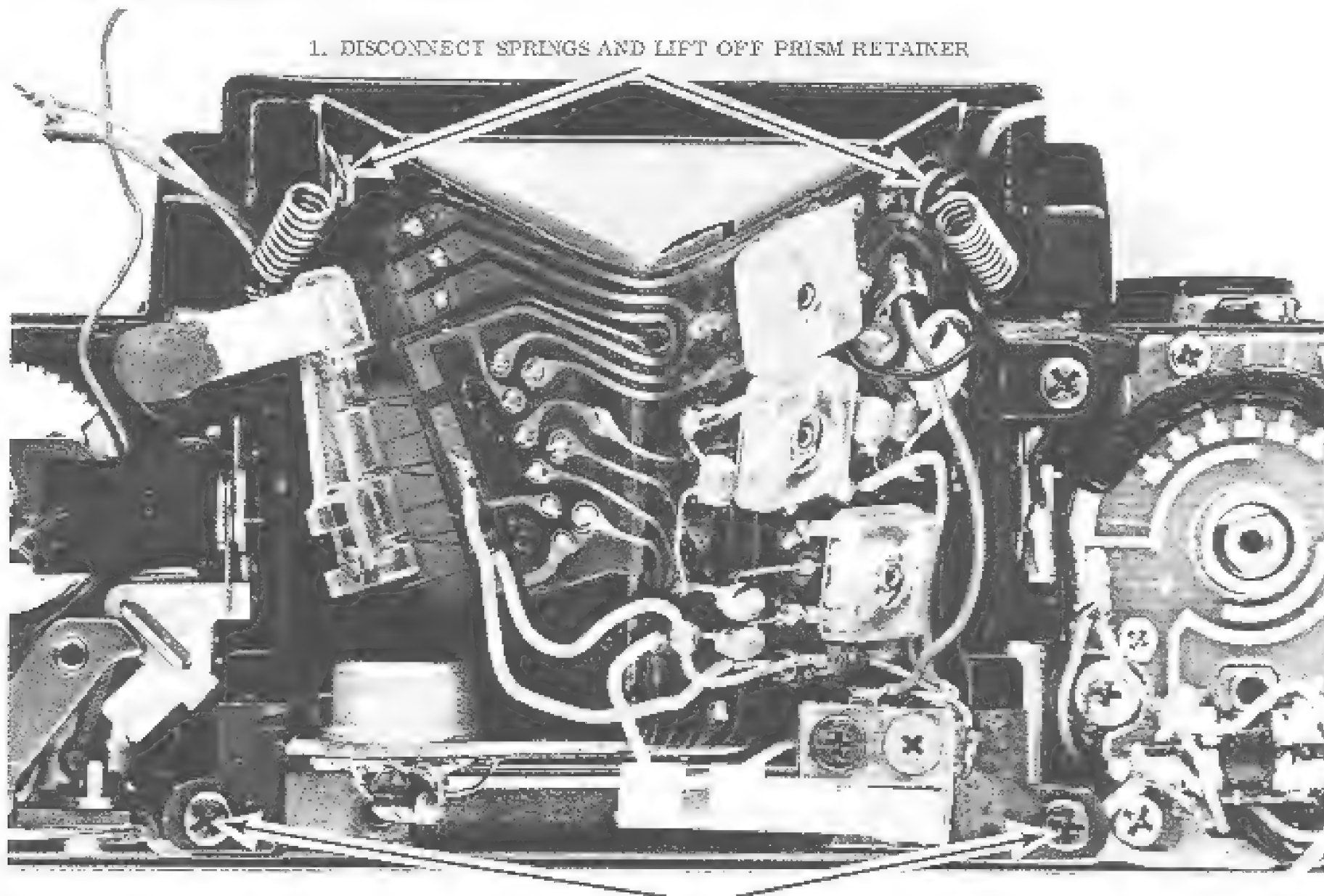
IN #2 VERSION, UNSOLDER PURPLE WIRE FROM VR5



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TO REMOVE PENTAPRISM CIRCUIT BOARD:

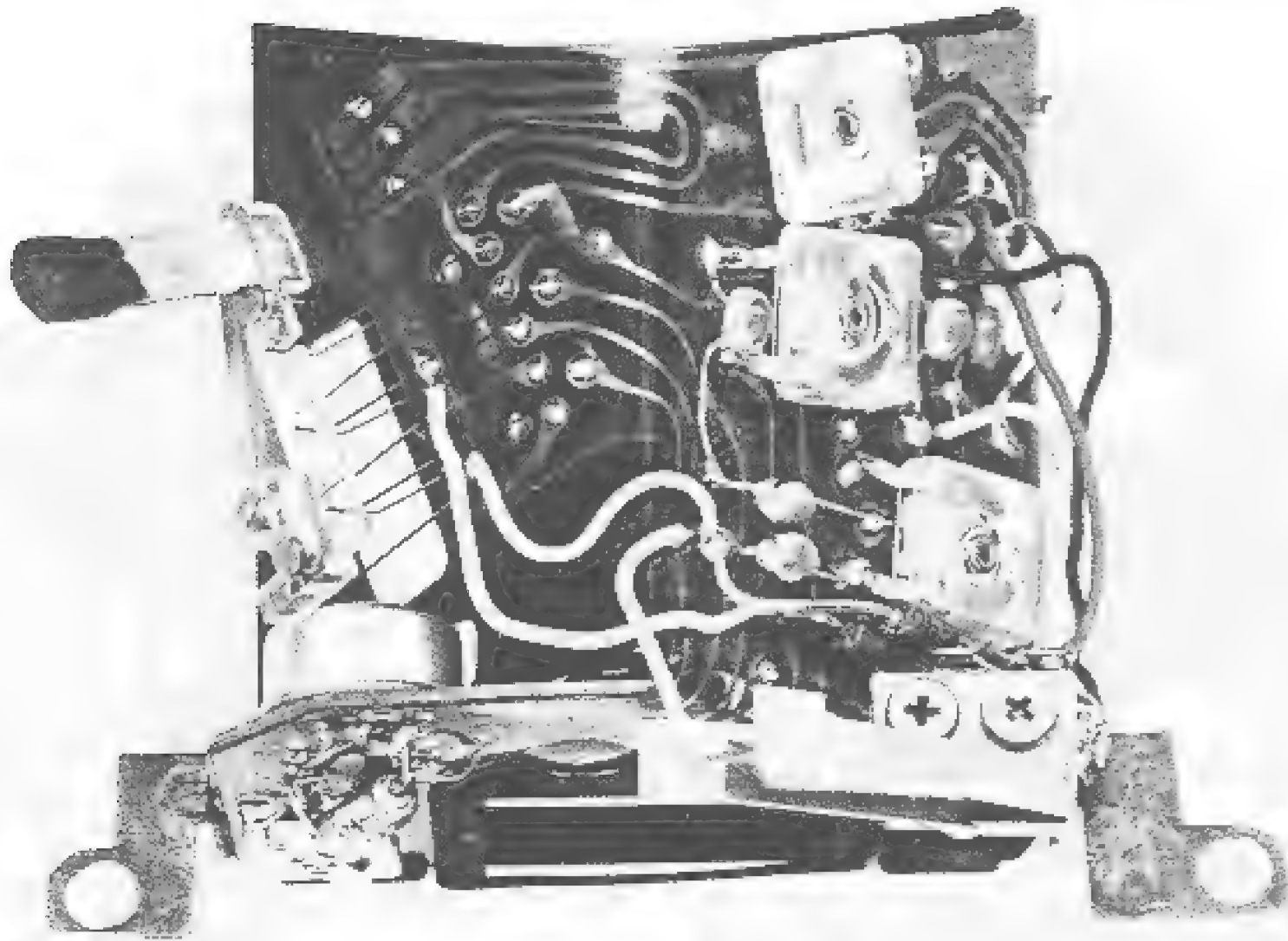
1. DISCONNECT SPRINGS AND LIFT OFF PRISM RETAINER



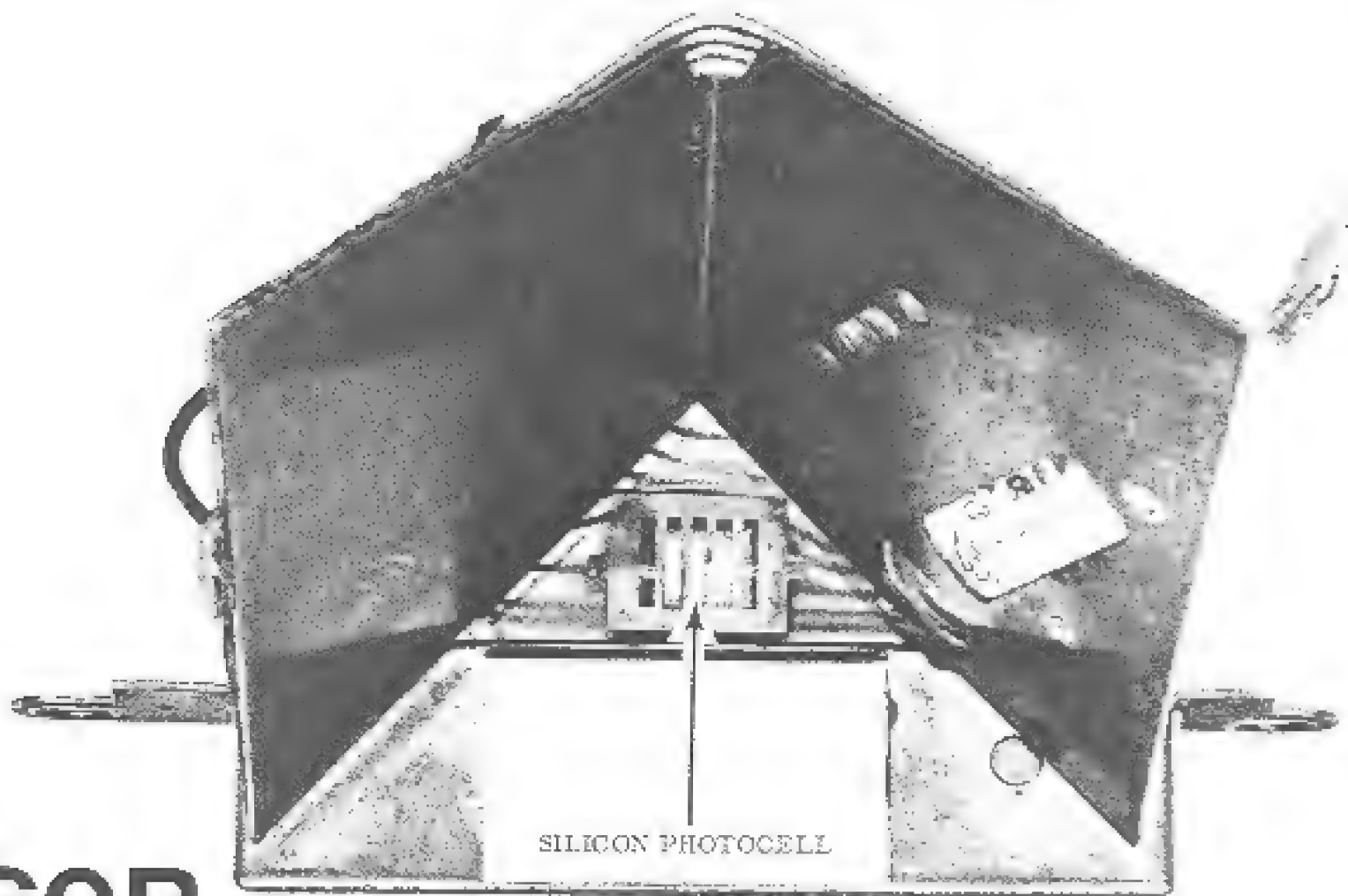
2. REMOVE TWO CIRCUIT-BOARD SCREWS

3. LIFT OFF PENTAPRISM CIRCUIT BOARD

PENTAPRISM CIRCUIT BOARD (VERSION #4)



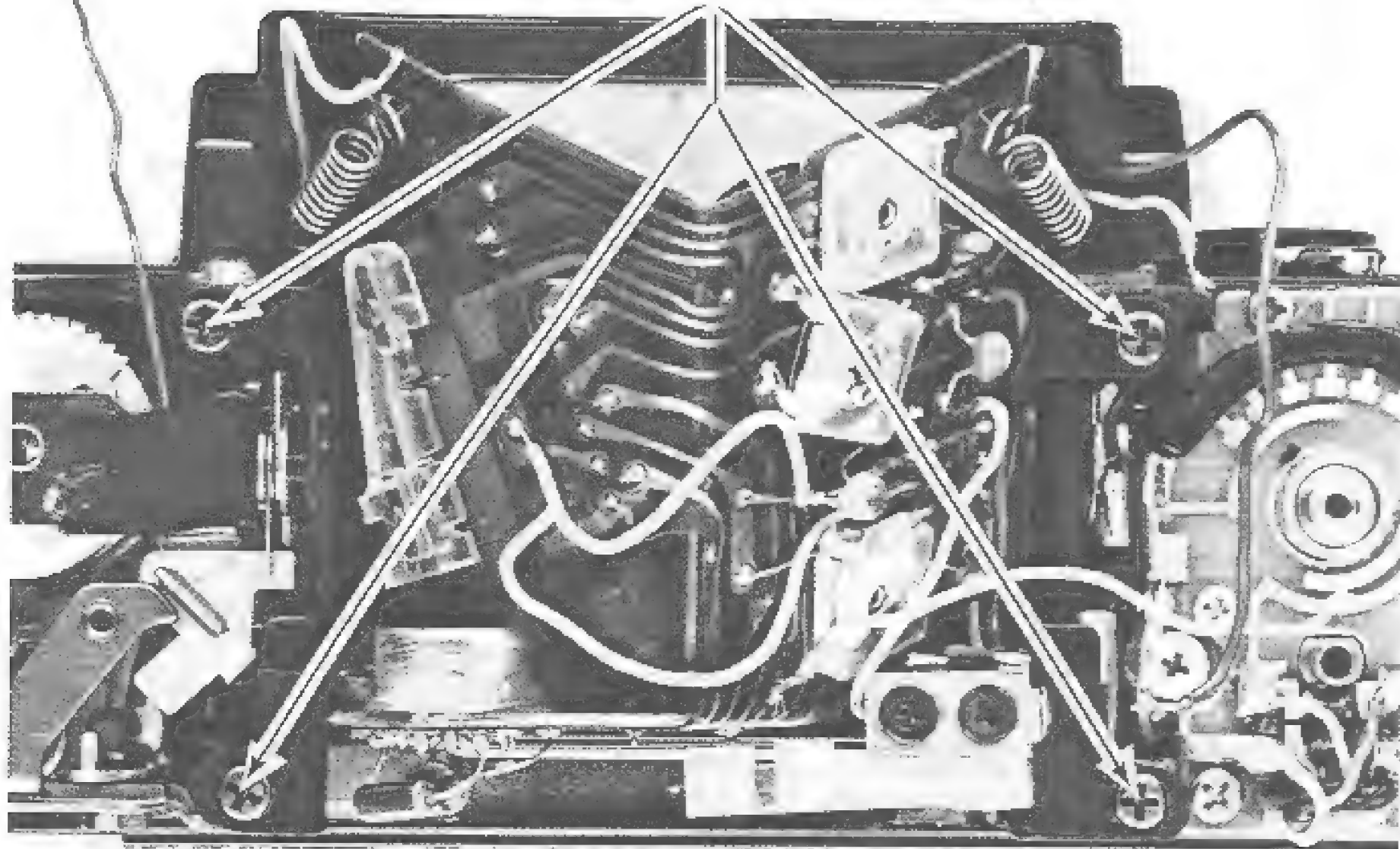
60A



60B

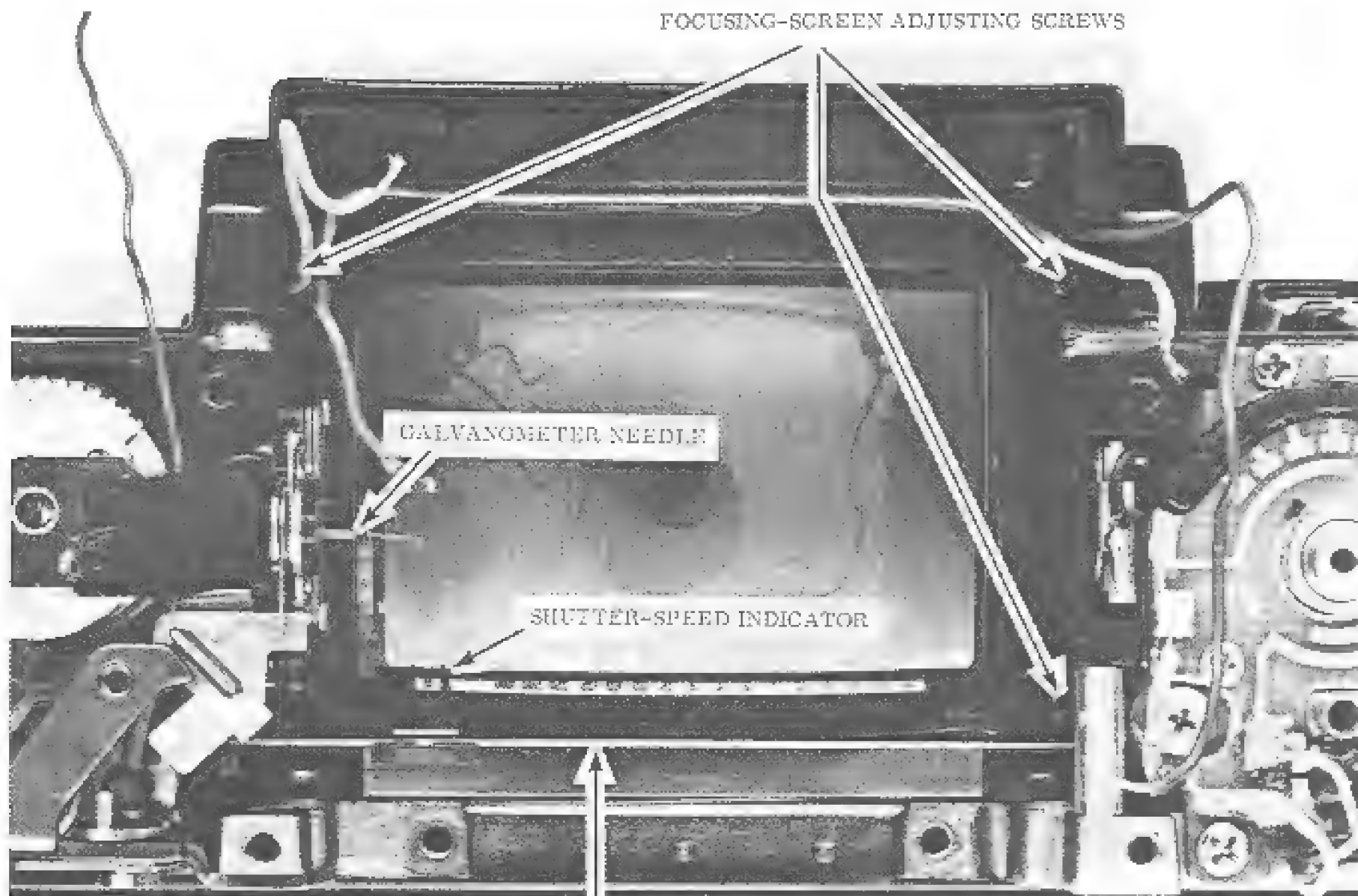


TO REMOVE COMPLETE PENTAPRISM UNIT, TAKE OUT FOUR SCREWS

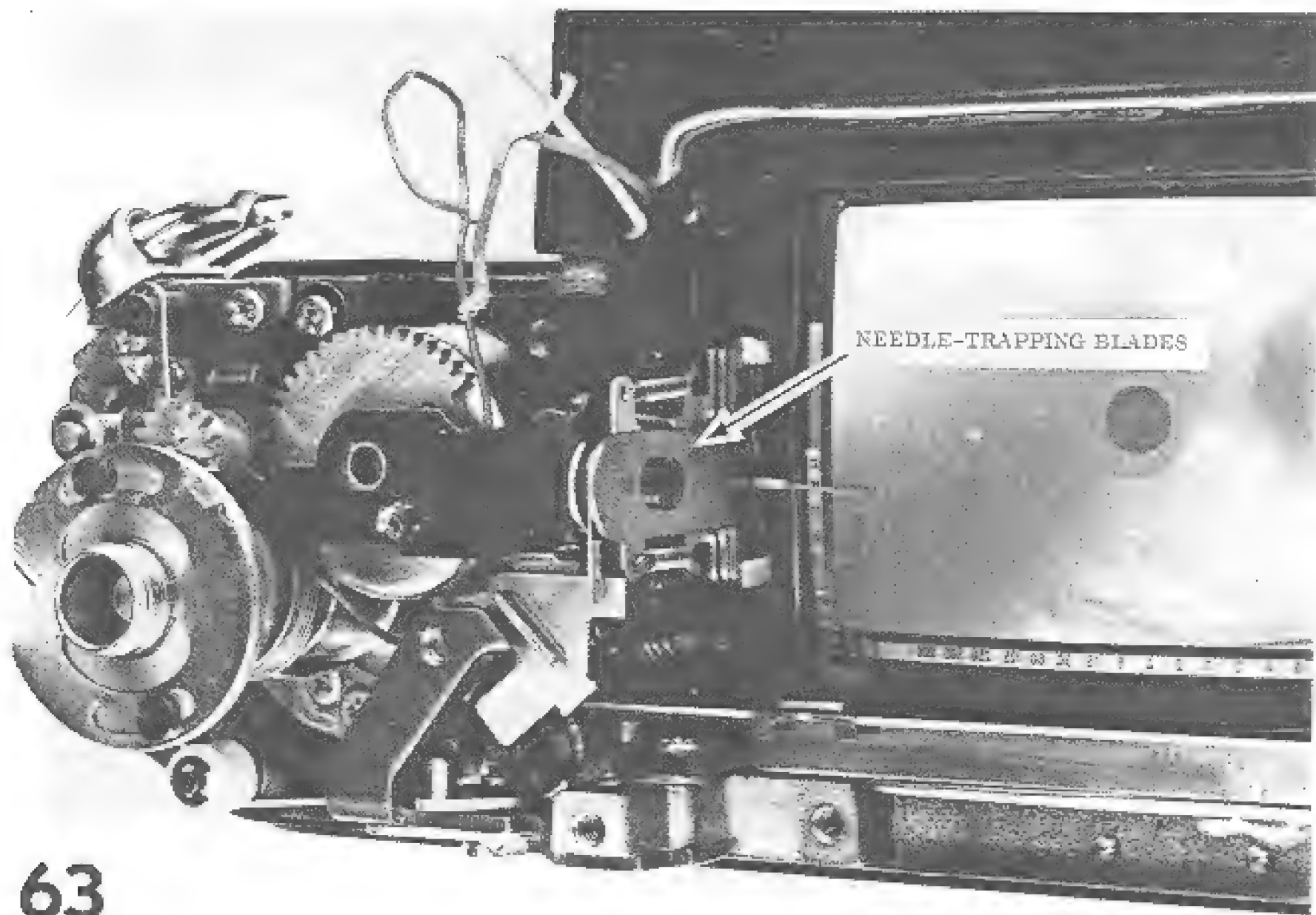


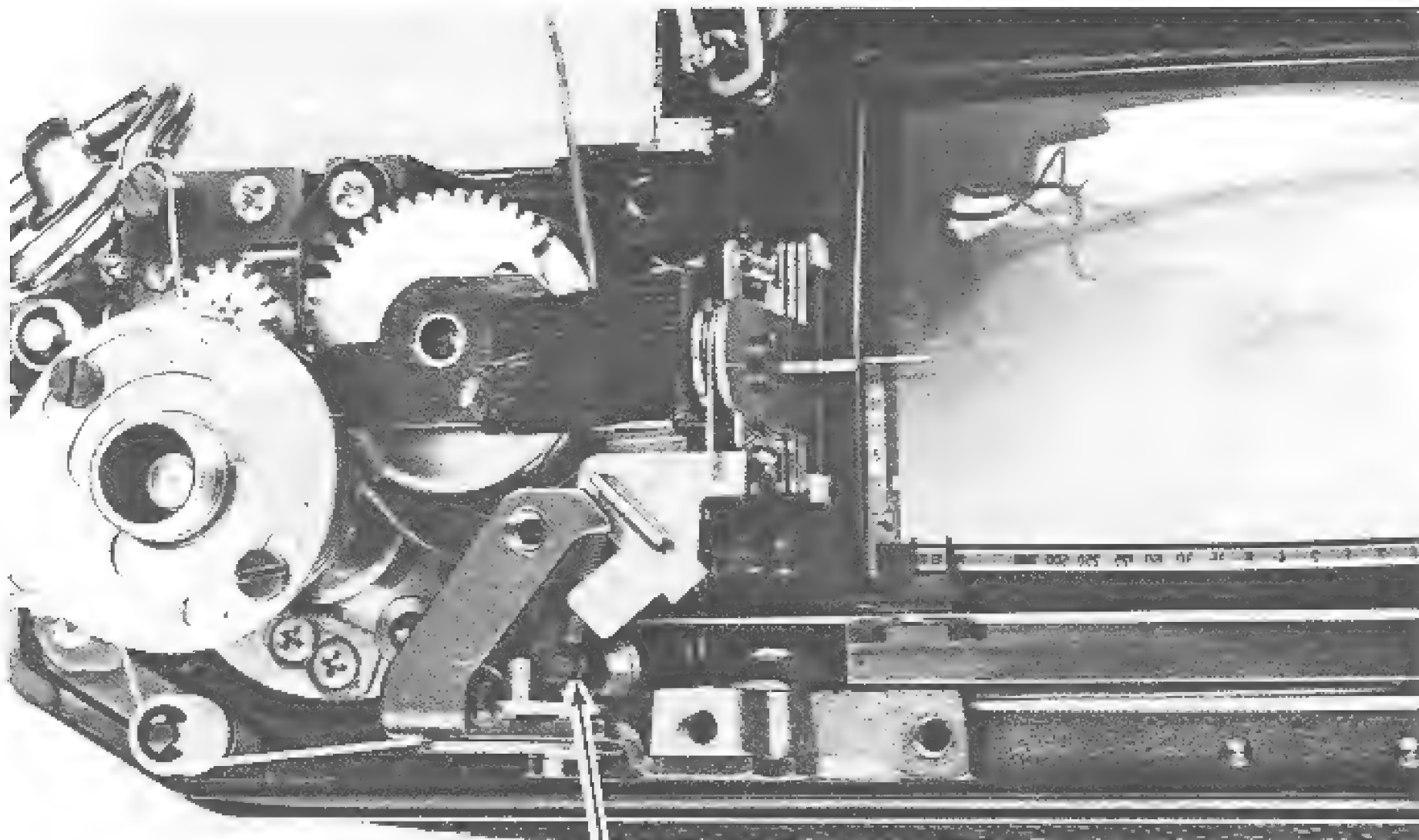


FOCUSING-SCREEN ADJUSTING SCREWS



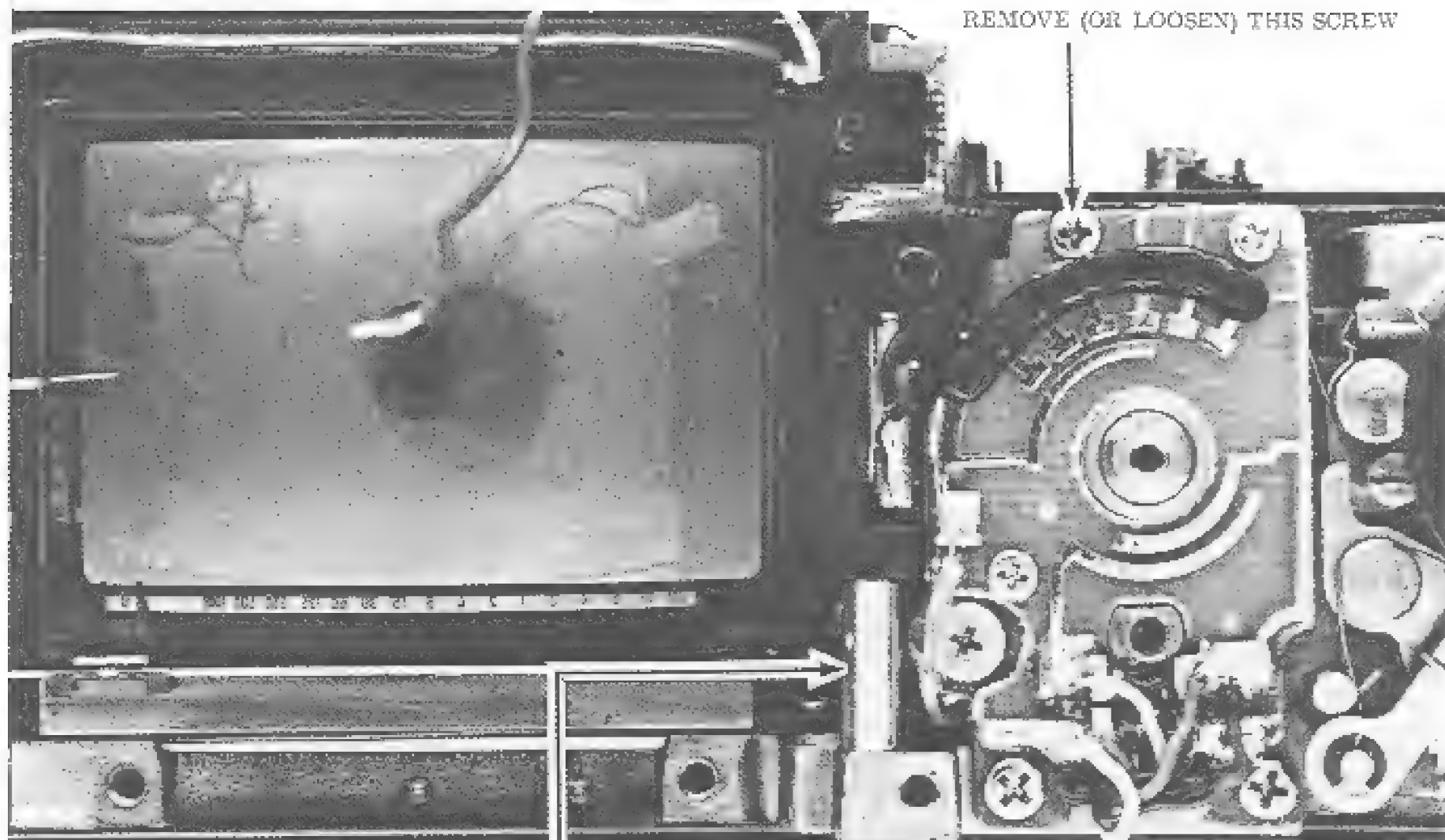
COUPLING CORD





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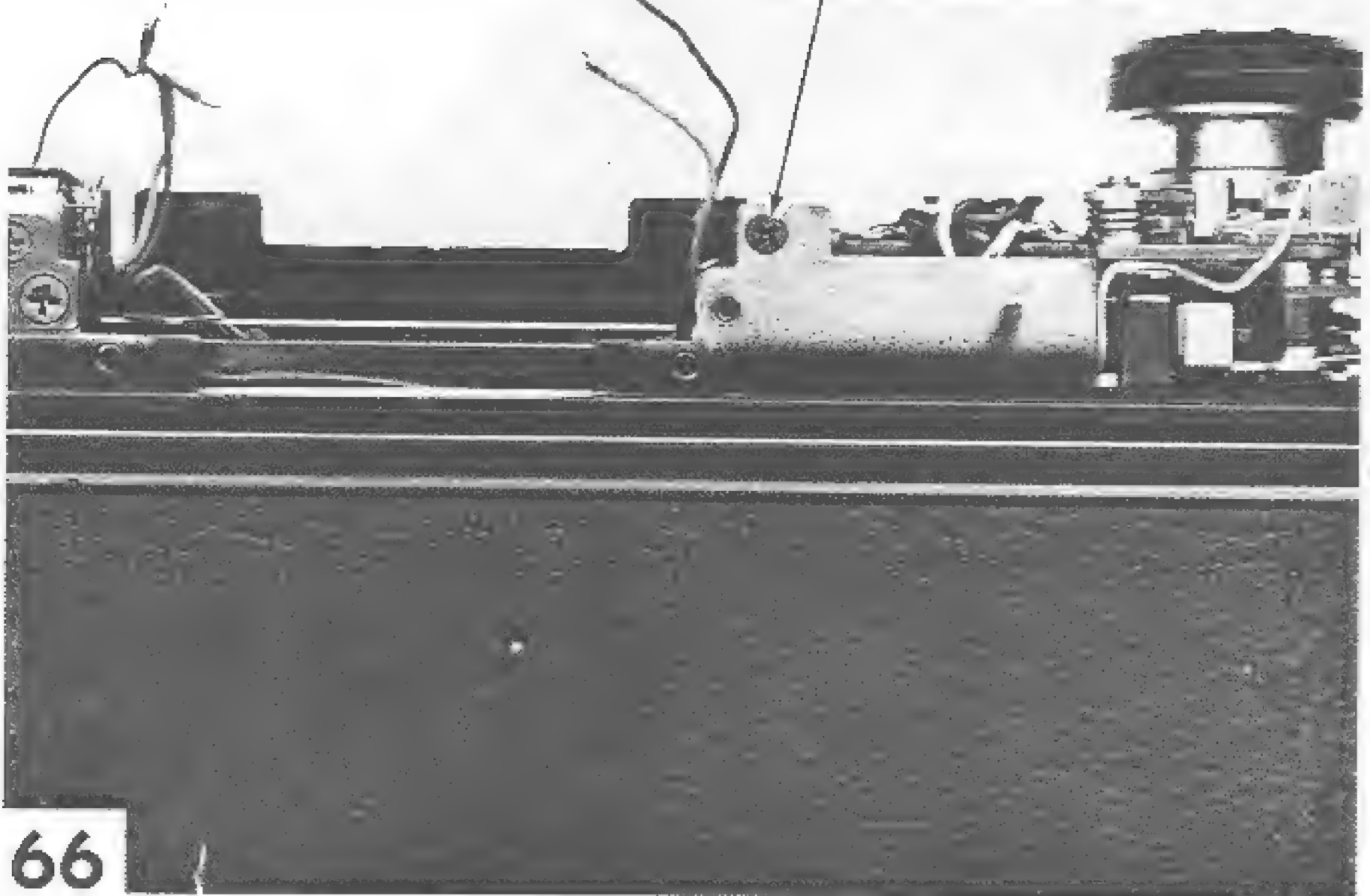
DISCONNECT GALVANOMETER SPRING

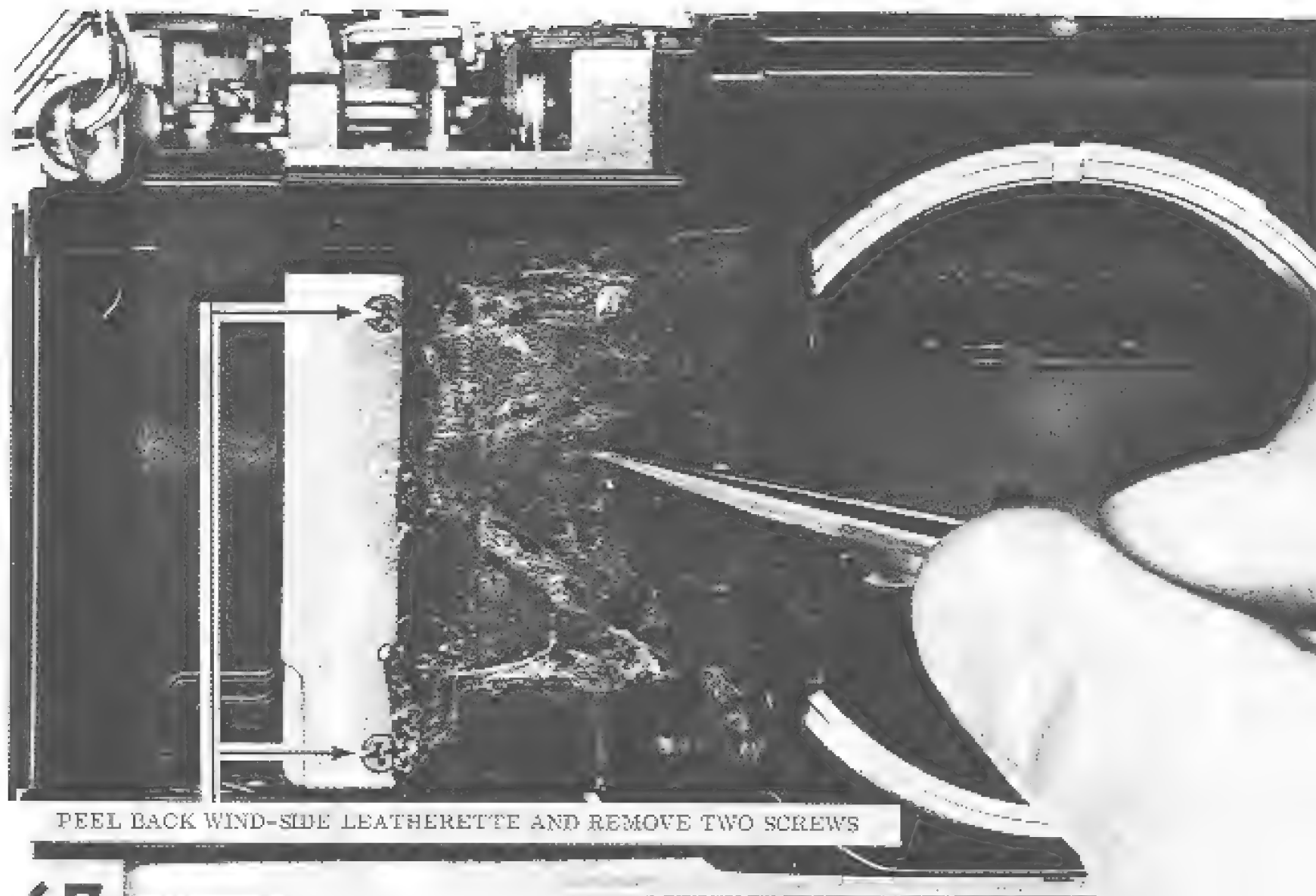


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NOTE SPACER BETWEEN MIRROR CAGE AND CAMERA BODY -- SPACER WILL BE LOOSE WHEN YOU REMOVE THE SCREW SHOWN IN THE NEXT ILLUSTRATION

REMOVE SCREW AND SPACER





PEEL BACK WIND-SIDE LEATHERETTE AND REMOVE TWO SCREWS

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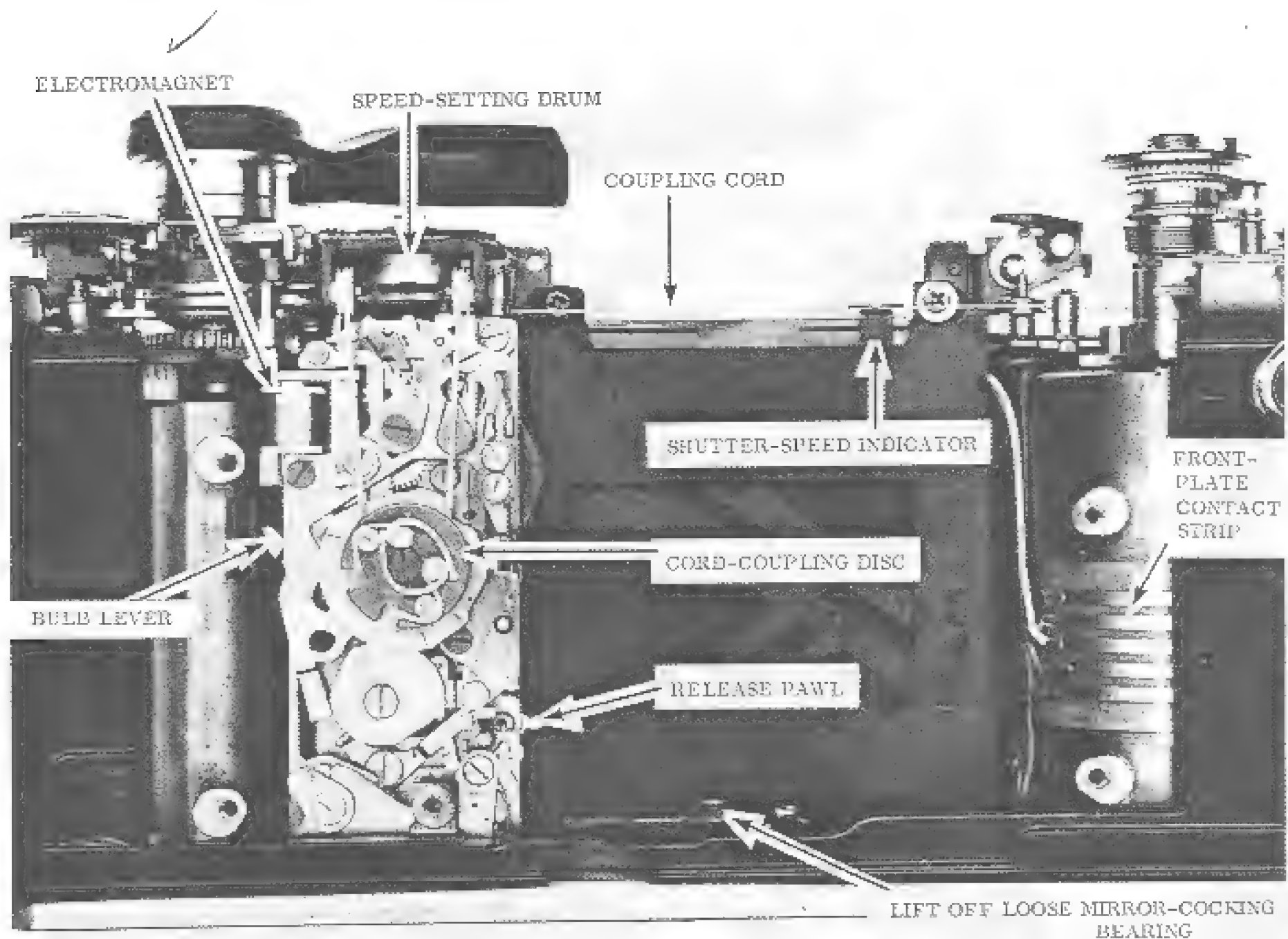
1. PEEL BACK CORNER OF WIND-SIDE LEATHERETTE (SHOWN CUTAWAY HERE) AND REMOVE SCREW

2. PEEL BACK REWIND-SIDE LEATHERETTE AND REMOVE TWO SCREWS

3. LIFT OUT FRONT-PLATE/MIRROR-CAGE ASSEMBLY

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*Shutter can be released when replacing front plate*



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SHUTTER SET TO "BULB"

*Check for stuck elec magnet if shutter is open*

PULLEYS FOR SHUTTER-SETTING CORDS

ADJUSTMENT PULLEY FOR COUPLING CORD

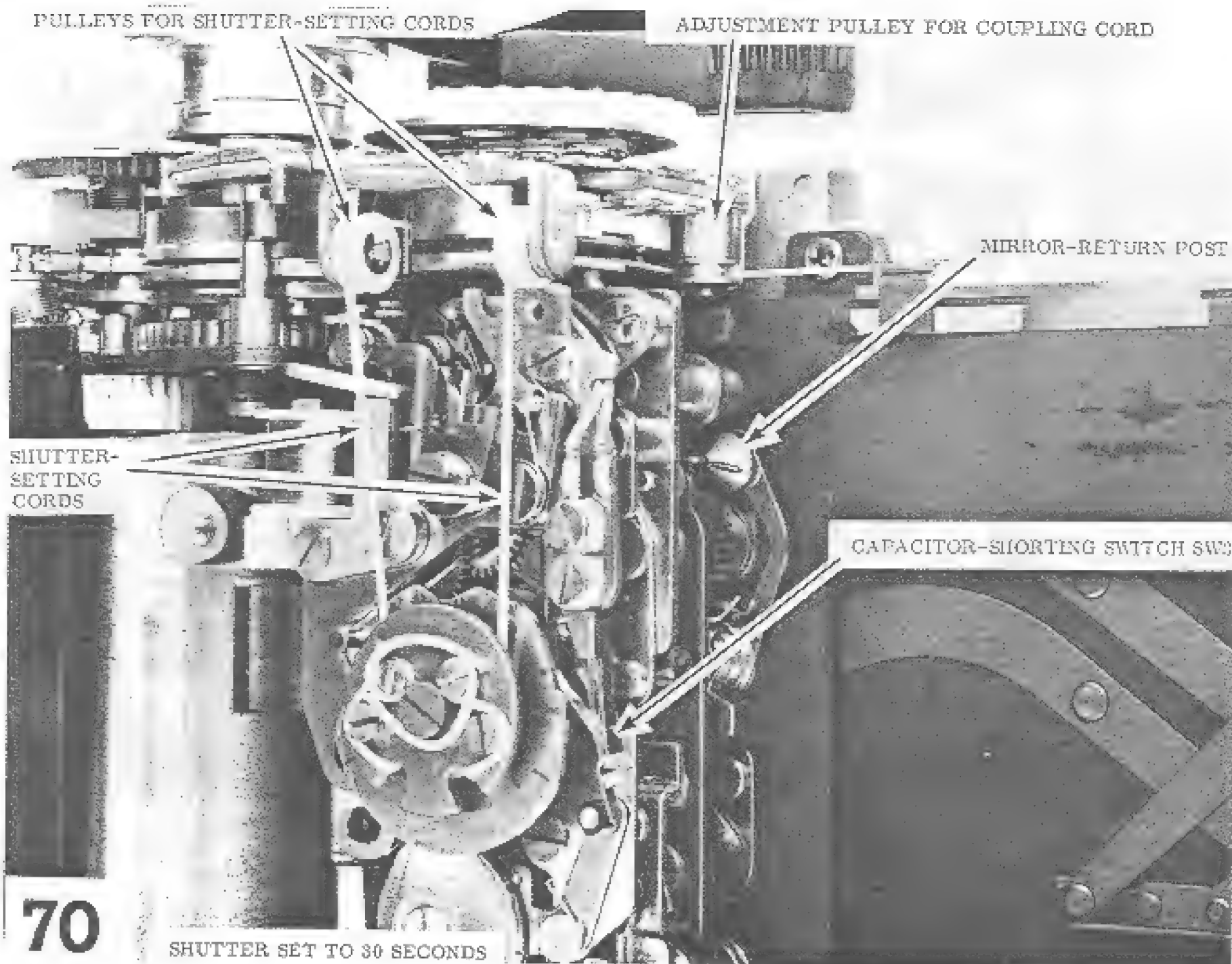
MIRROR-RETURN POST

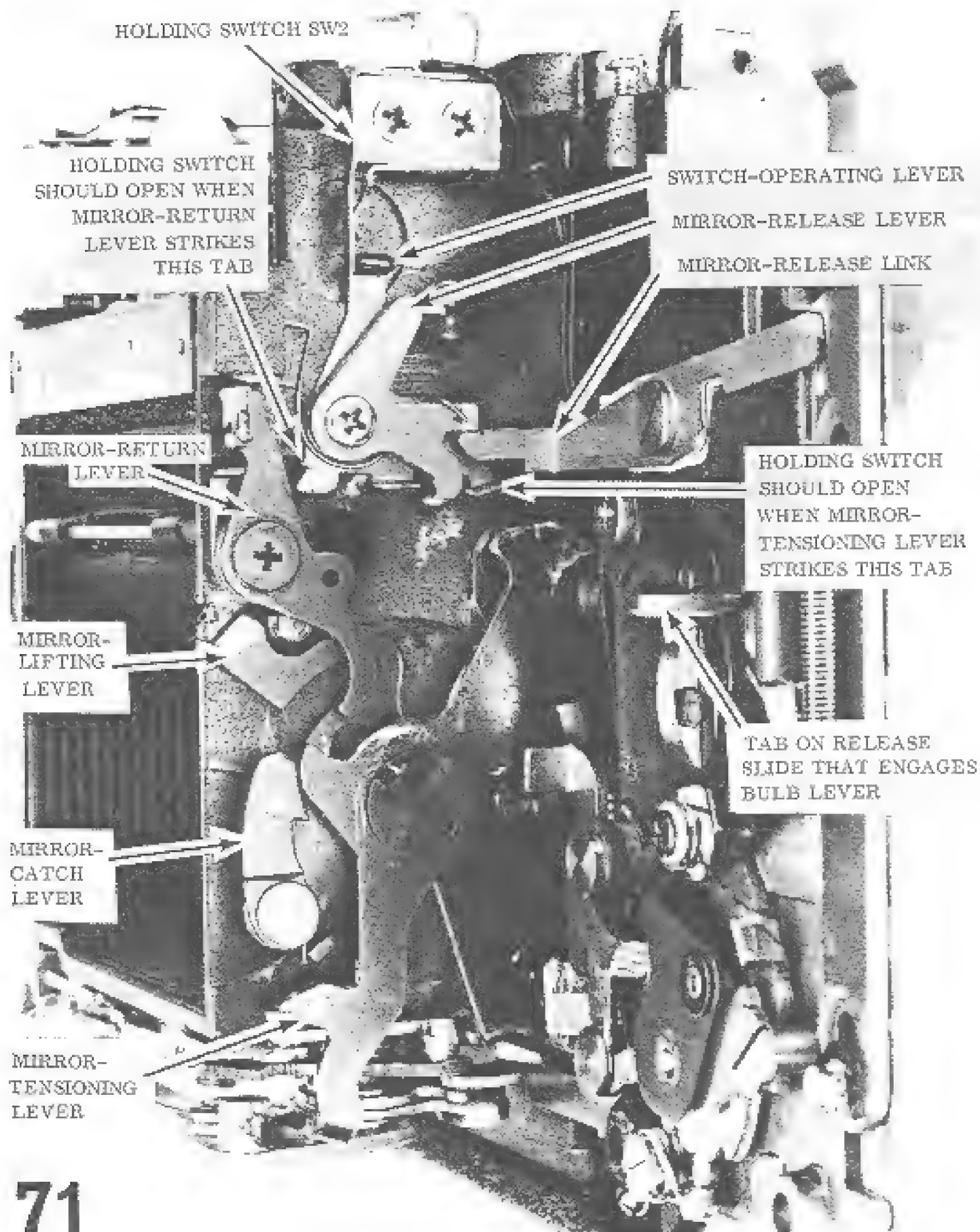
SHUTTER-  
SETTING  
CORDS

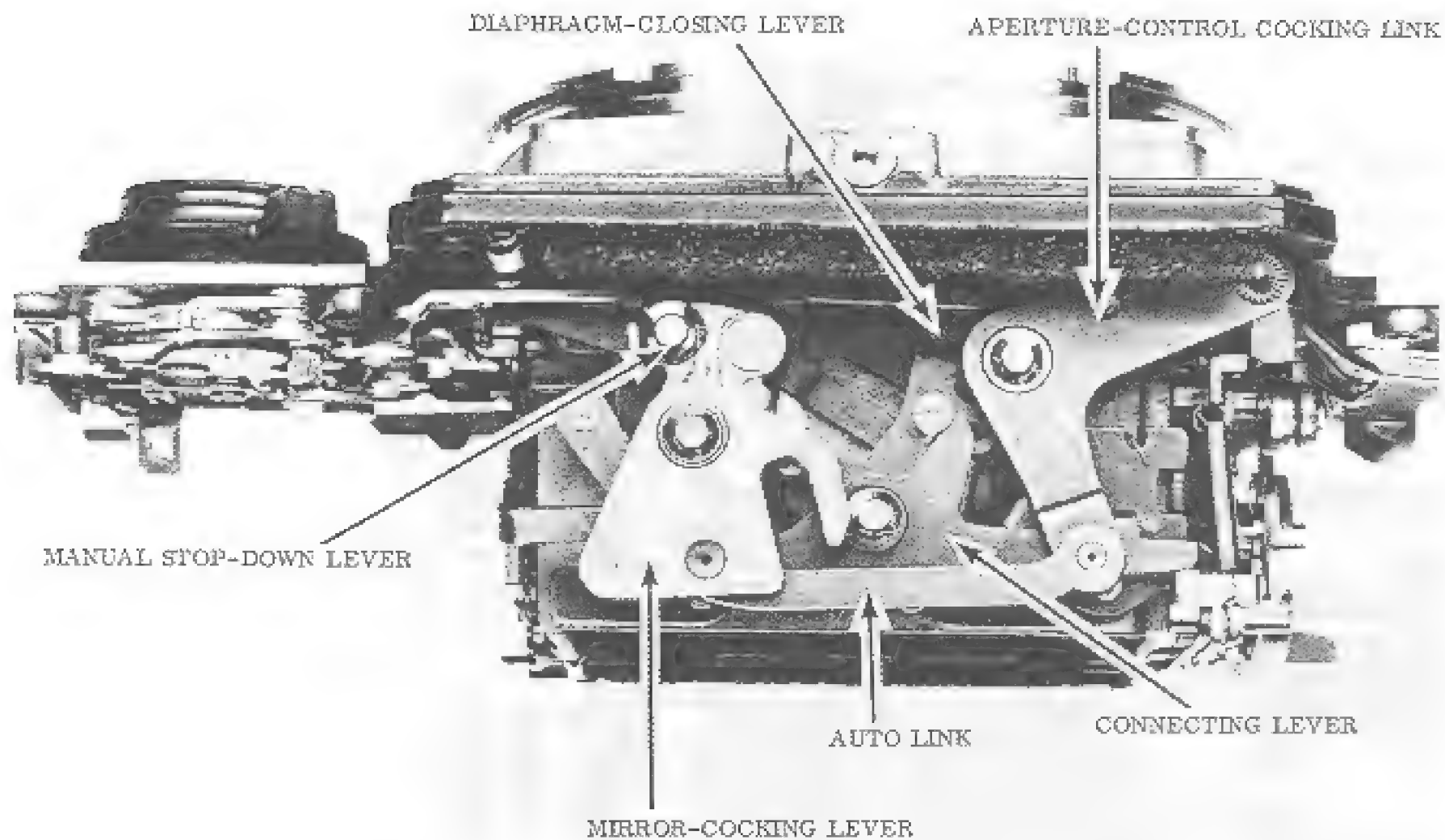
CAPACITOR-SHORTING SWITCH SW3

70

SHUTTER SET TO 30 SECONDS



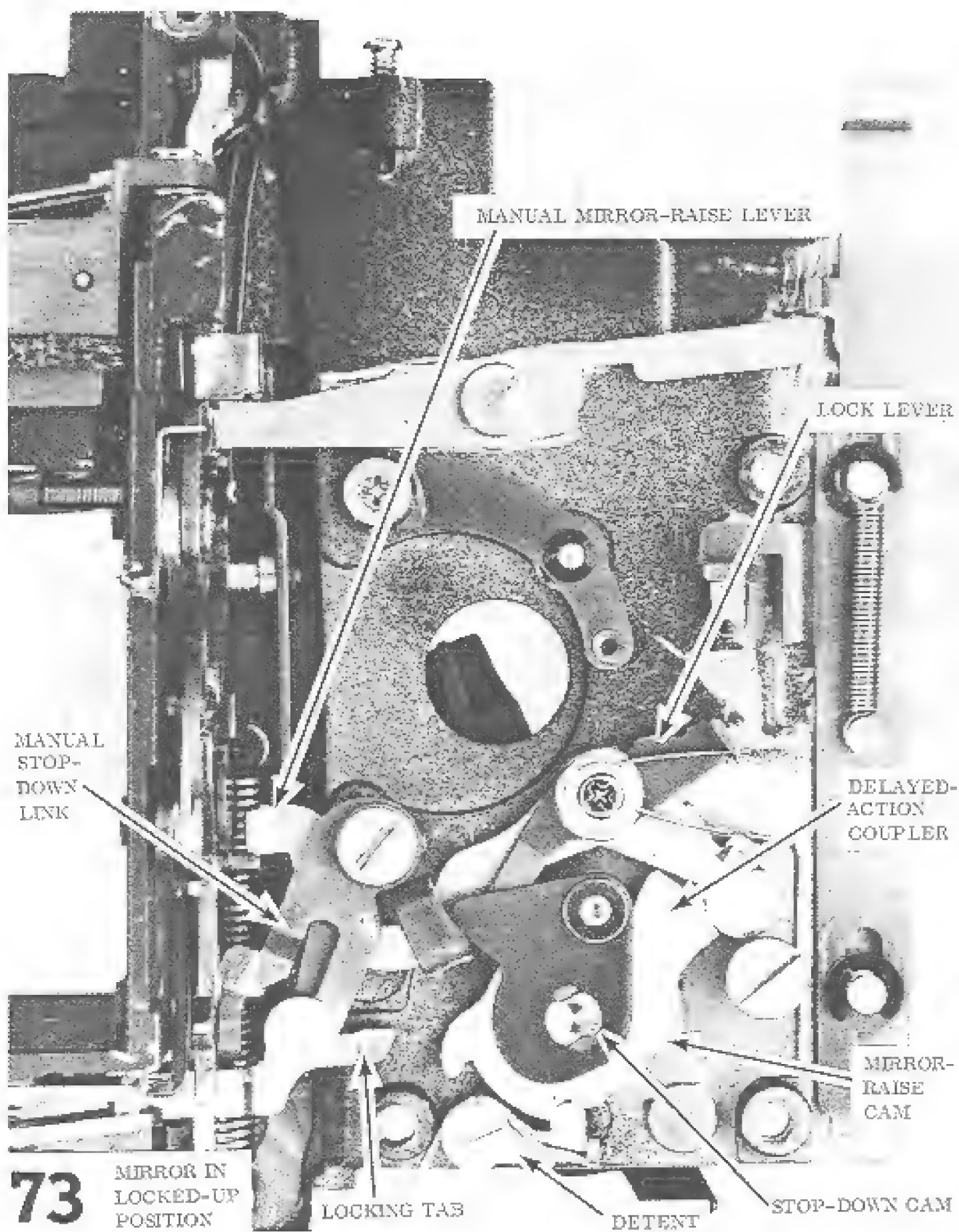




72

BOTTOM OF MIRROR CAGE

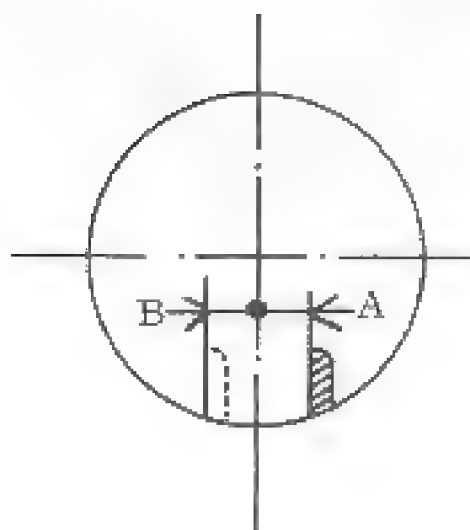




ECCENTRIC FOR ADJUSTING POSITION OF  
DIAPHRAGM-CLOSING LEVER ON MANUAL  
(DEPTH-OF-FIELD PREVIEW) OPERATION

ECCENTRIC FOR ADJUSTING POSITION  
OF DIAPHRAGM-CLOSING LEVER ON  
NORMAL OPERATION

74



A = more than 5.5 mm

B = 1.8 — 3.2 mm



MAXIMUM-APERTURE  
CORRECTION LEVER

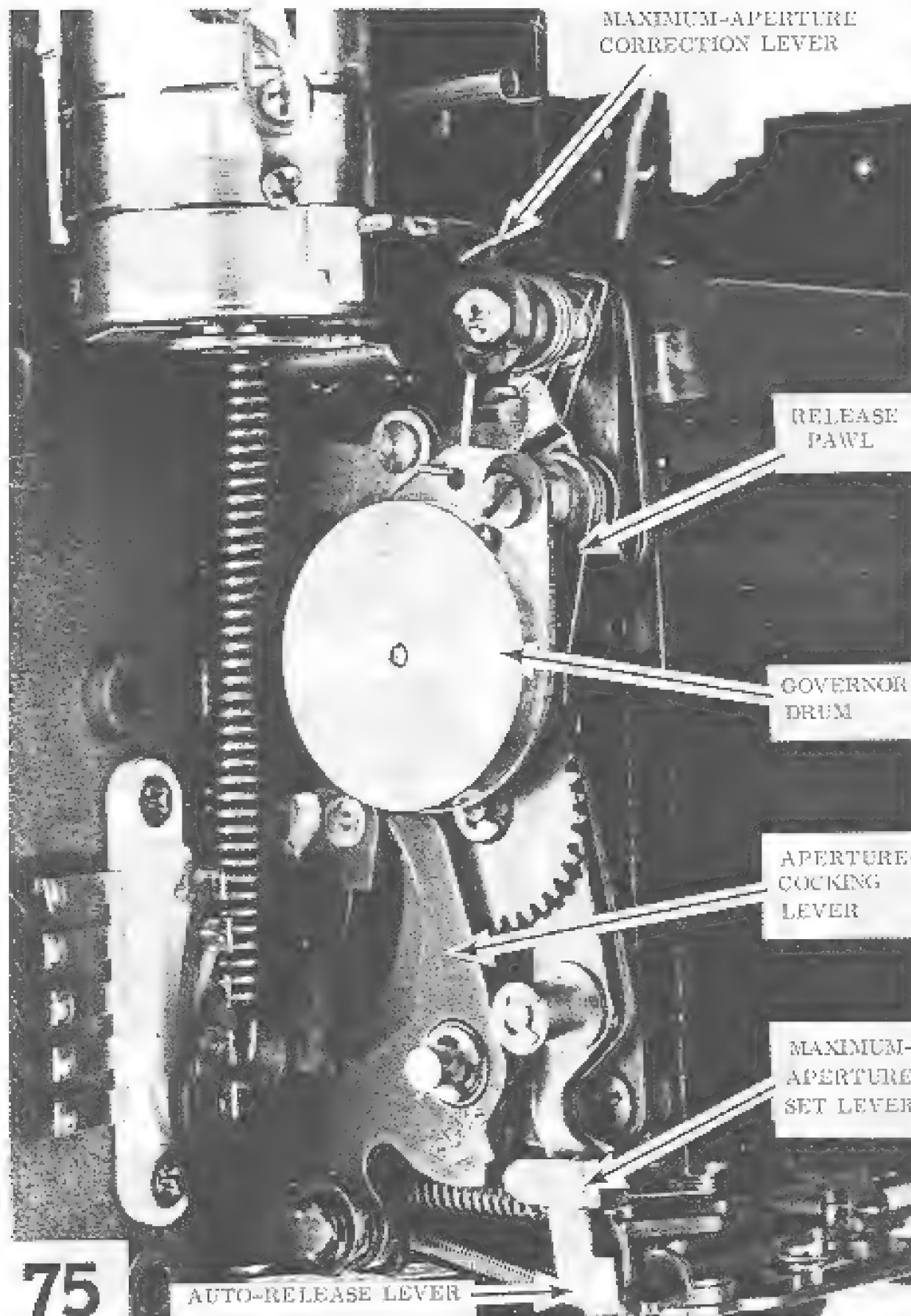
RELEASE  
PAWL

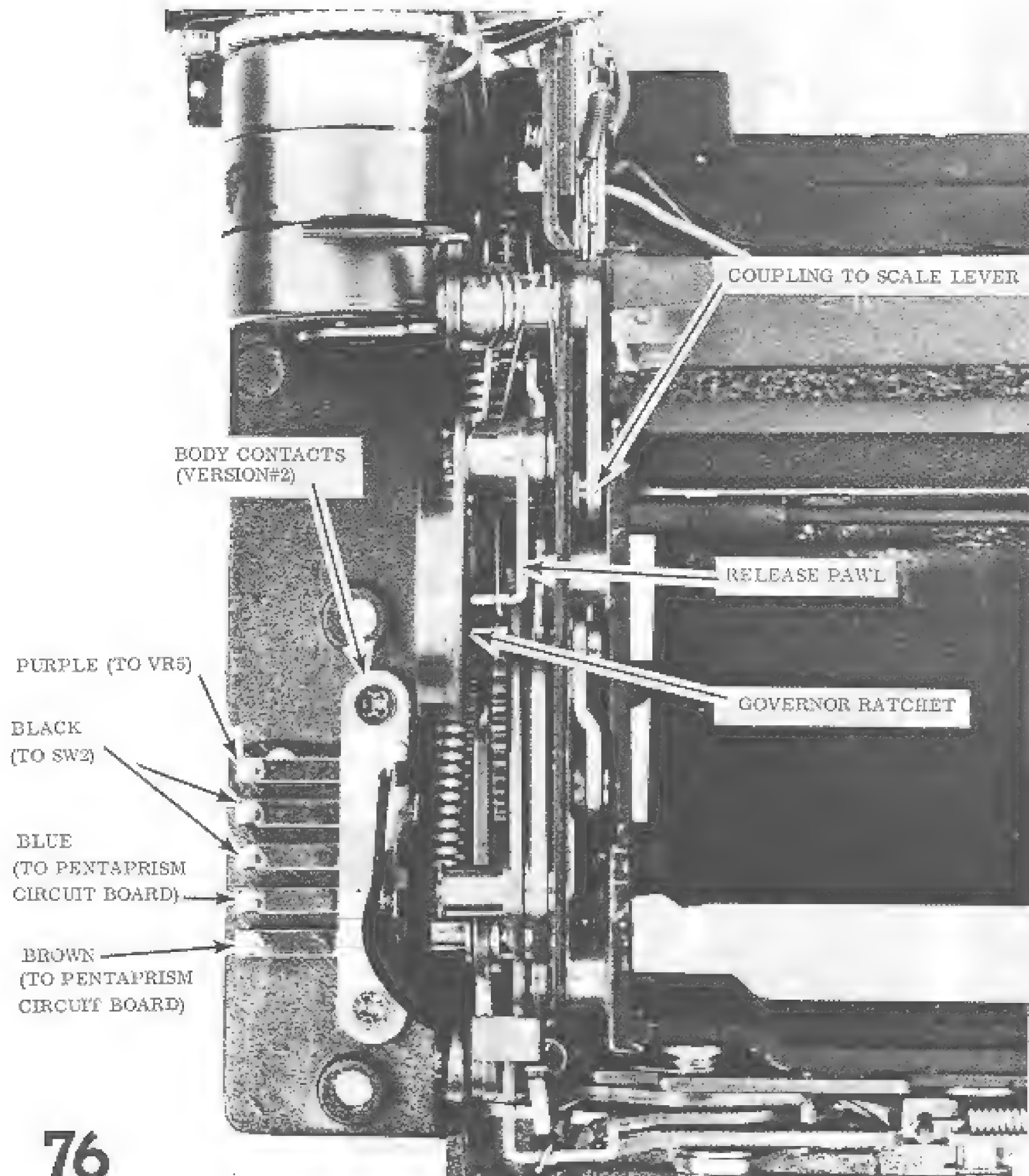
GOVERNOR  
DRUM

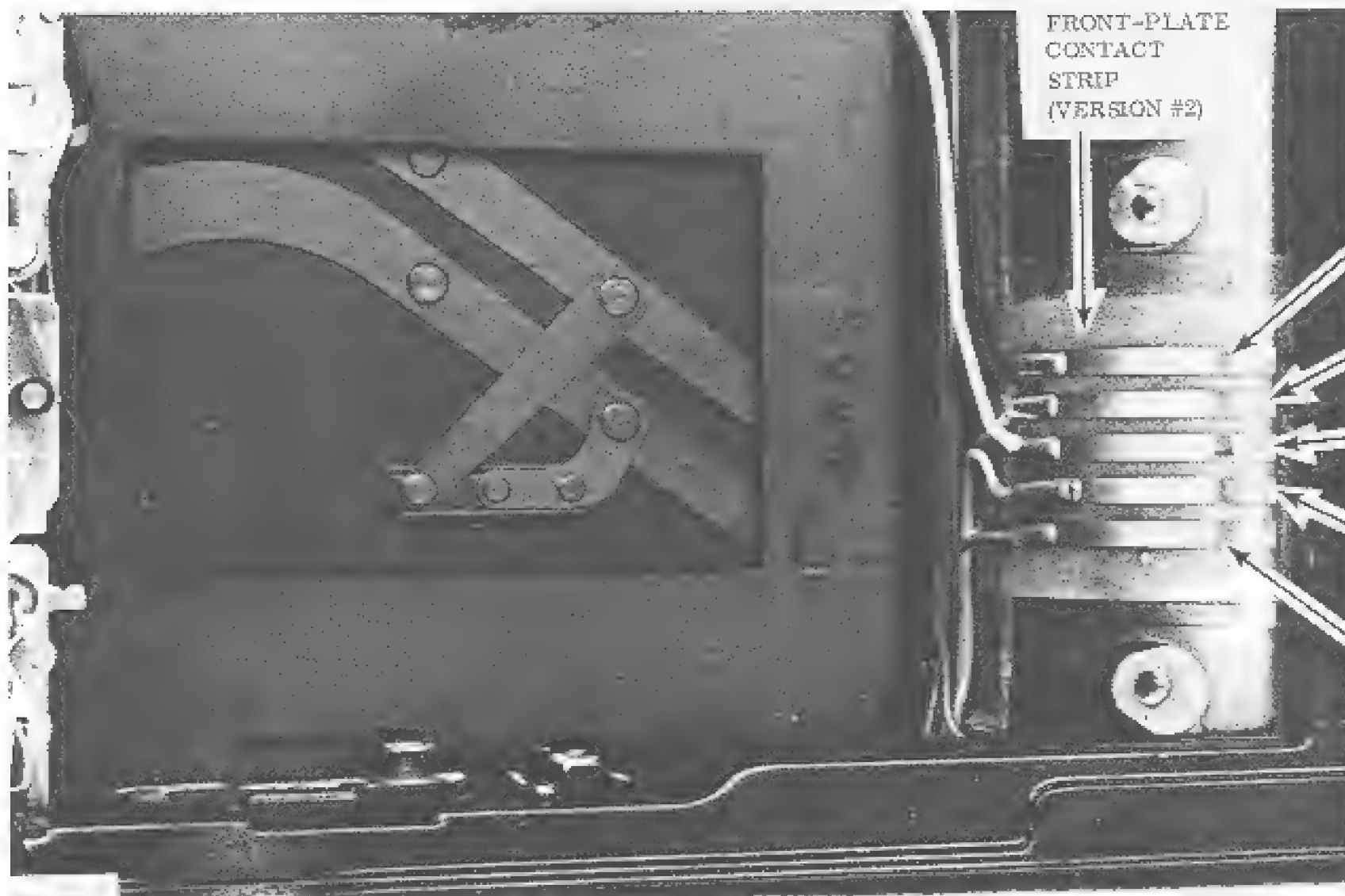
APERTURE-  
COCKING  
LEVER

MAXIMUM-  
APERTURE  
SET LEVER

AUTO-RELEASE LEVER







FRONT-PLATE  
CONTACT  
STRIP  
(VERSION #2)

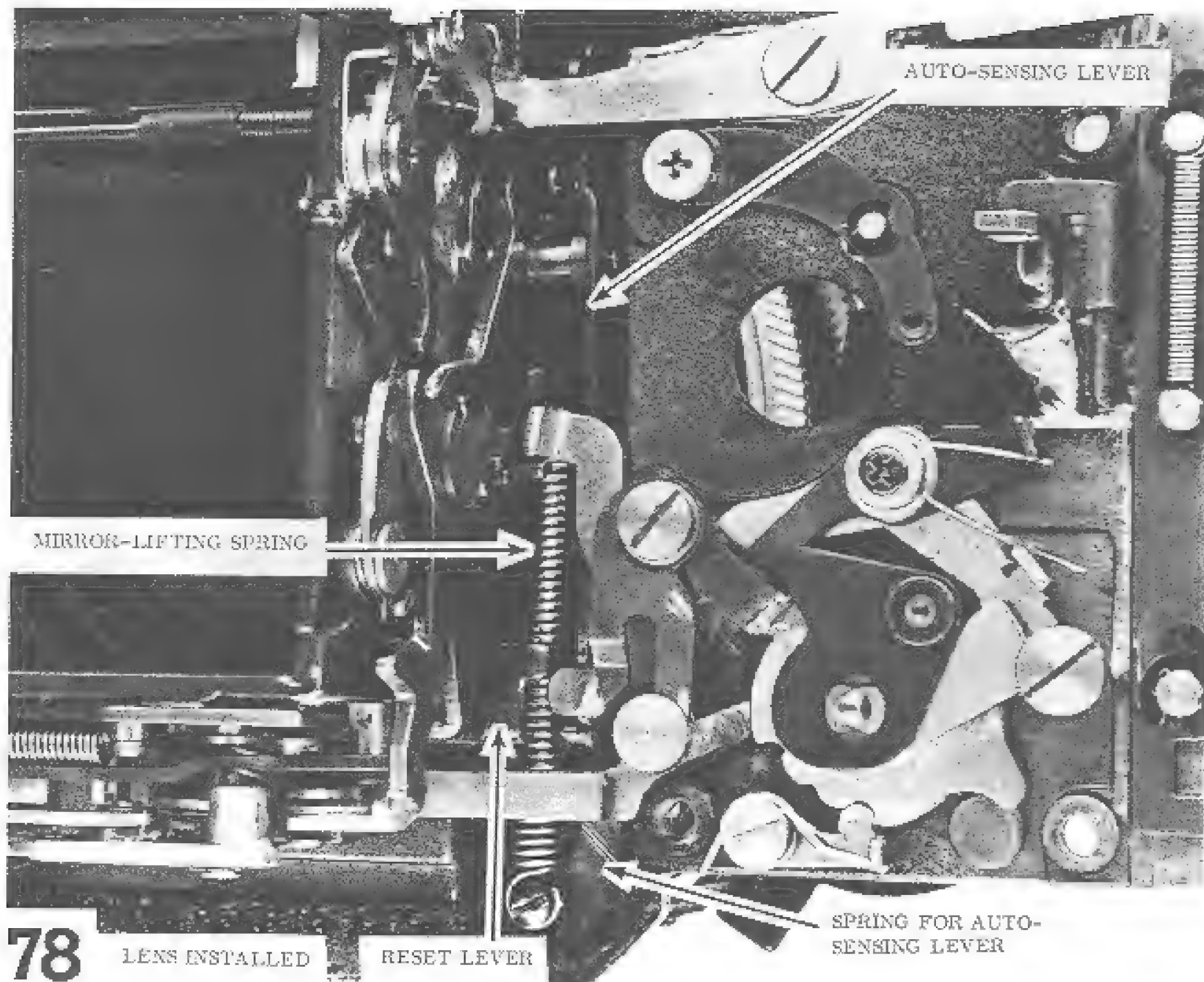
PURPLE  
(TO Th2)

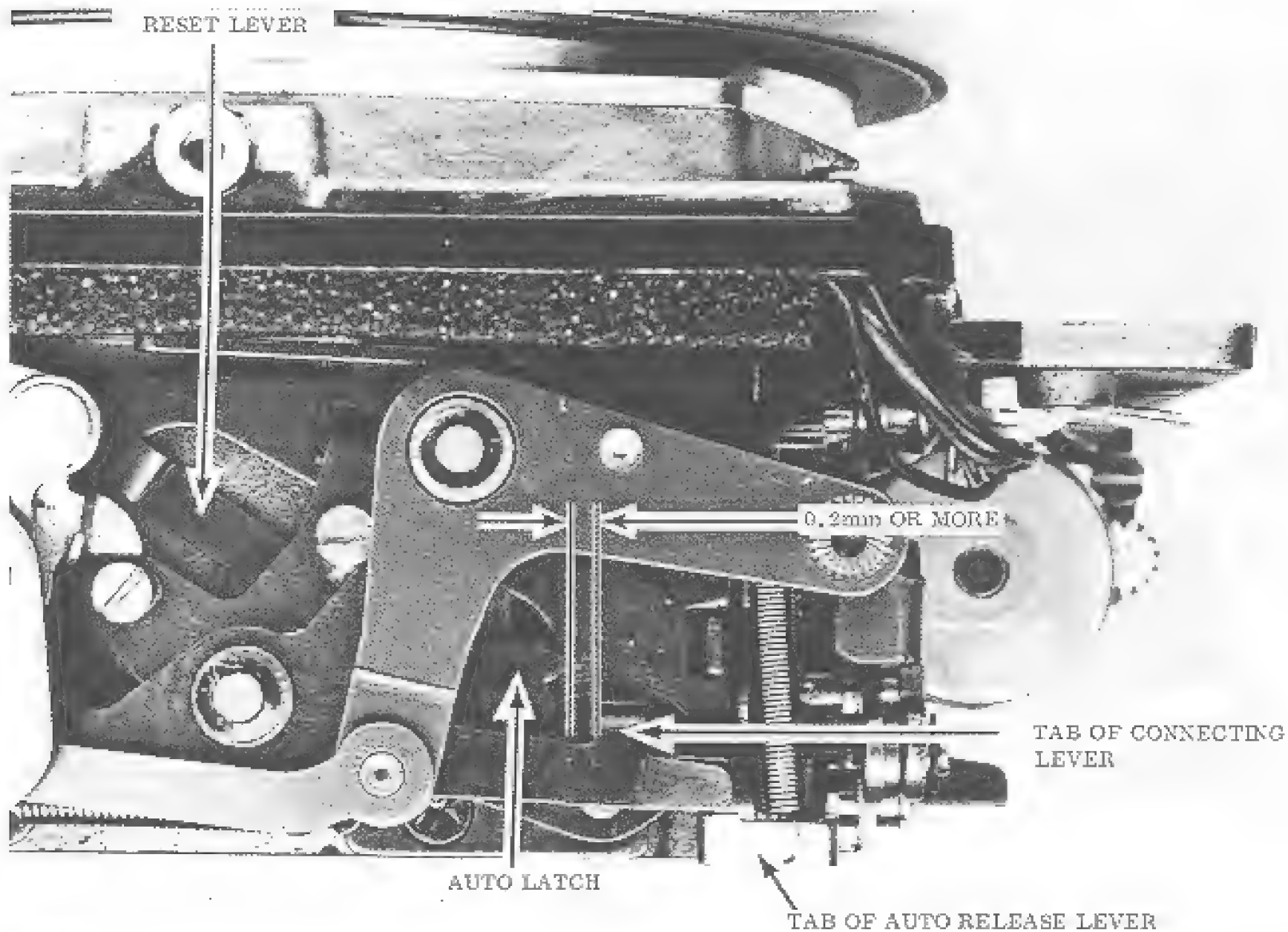
ORANGE  
(TO VR6)

WHITE  
(TO IC3)

LIGHT  
BLUE  
(TO VR1)

BROWN  
(TO CENTER  
BATTERY)



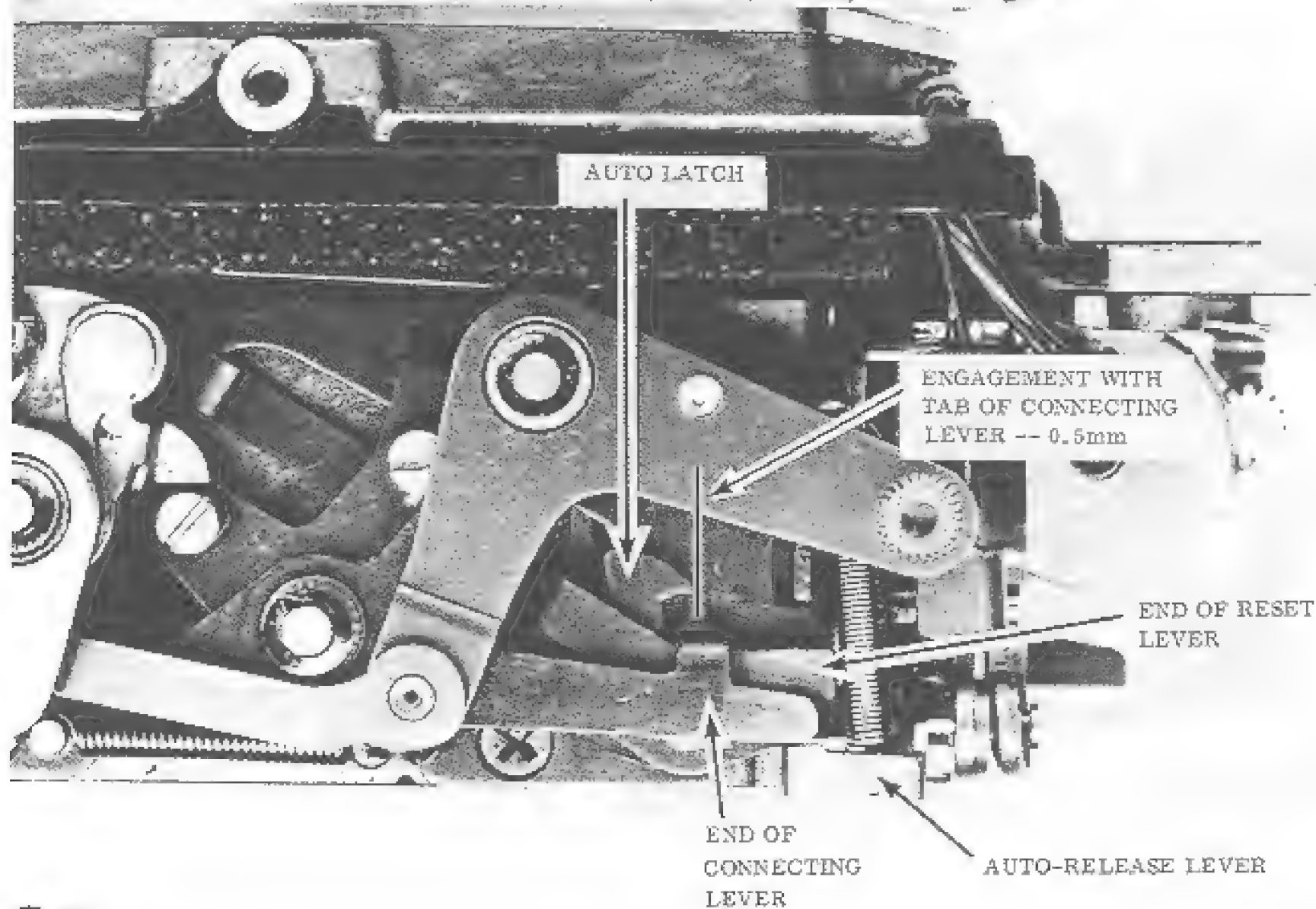


79

DIAPHRAGM-SETTING RING AT MANUAL SETTING

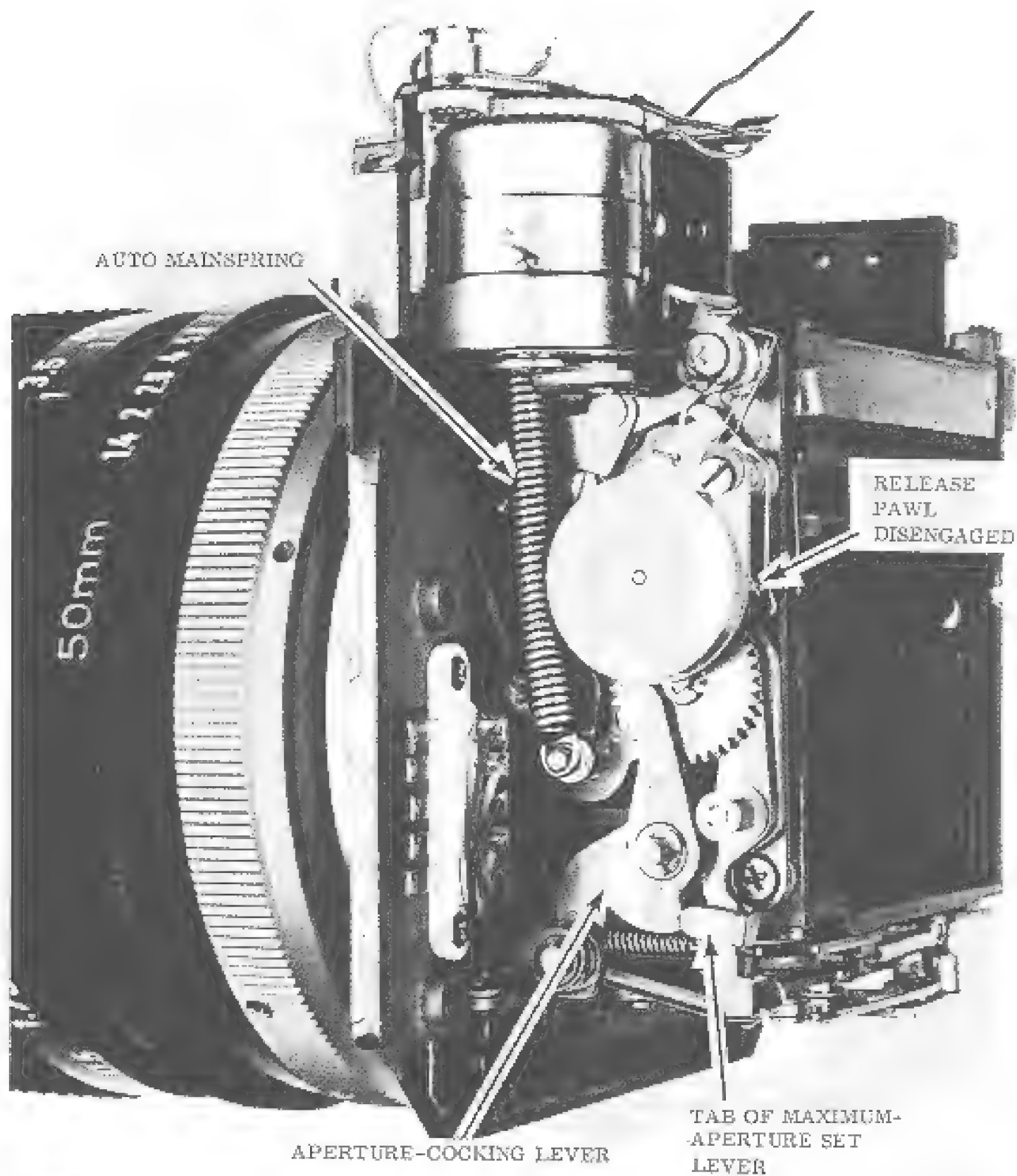


ADJUST AUTO-LATCH ENGAGEMENT WITH E-M CHANGE PIN (PART #19-0807) --  
AVAILABLE WITH SHOULDER LENGTHS OF 3.3mm, 3.5mm, 3.7mm, and 3.9mm

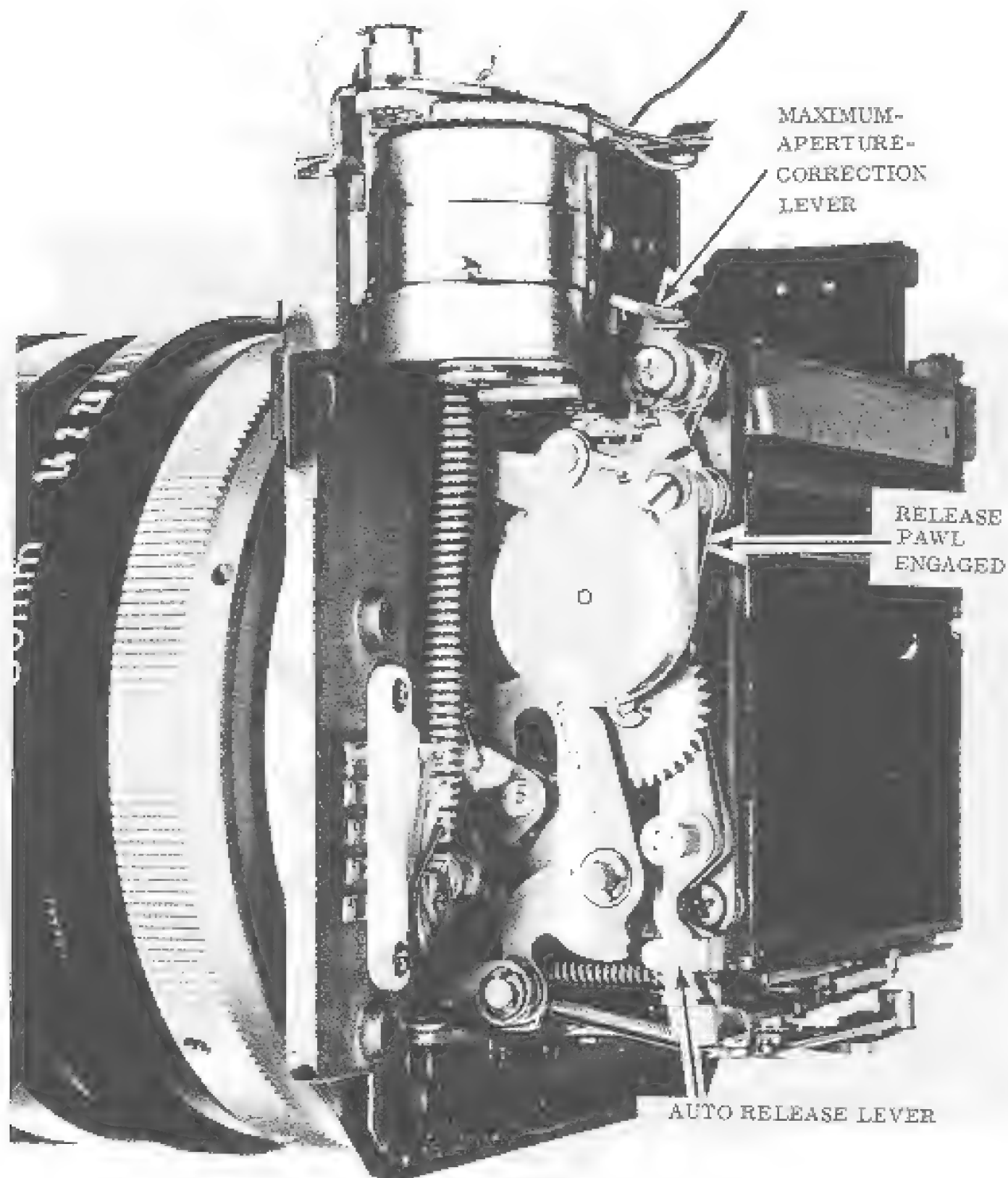


80

DIAPHRAGM-SETTING RING AT AUTOMATIC SETTING

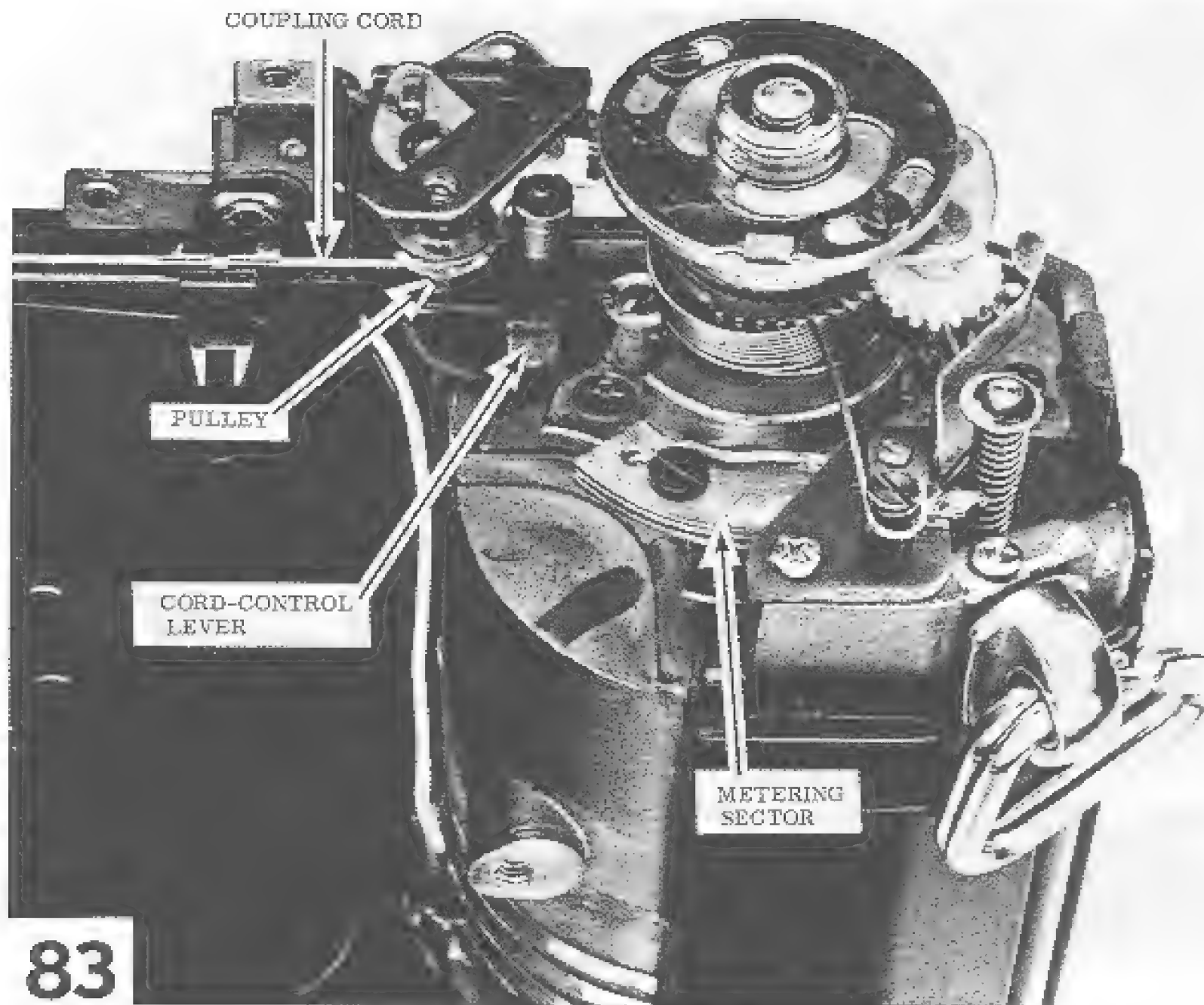


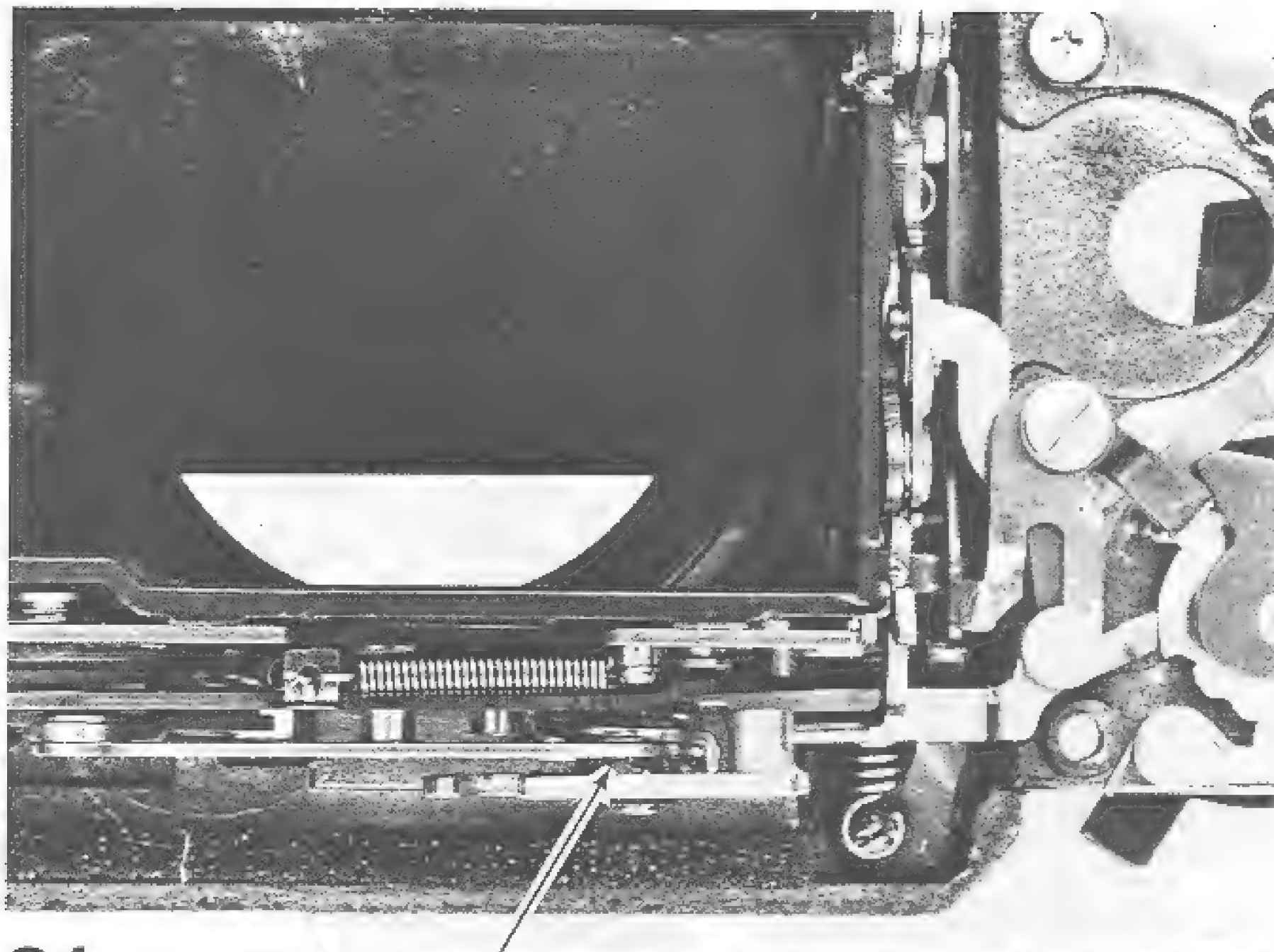




82

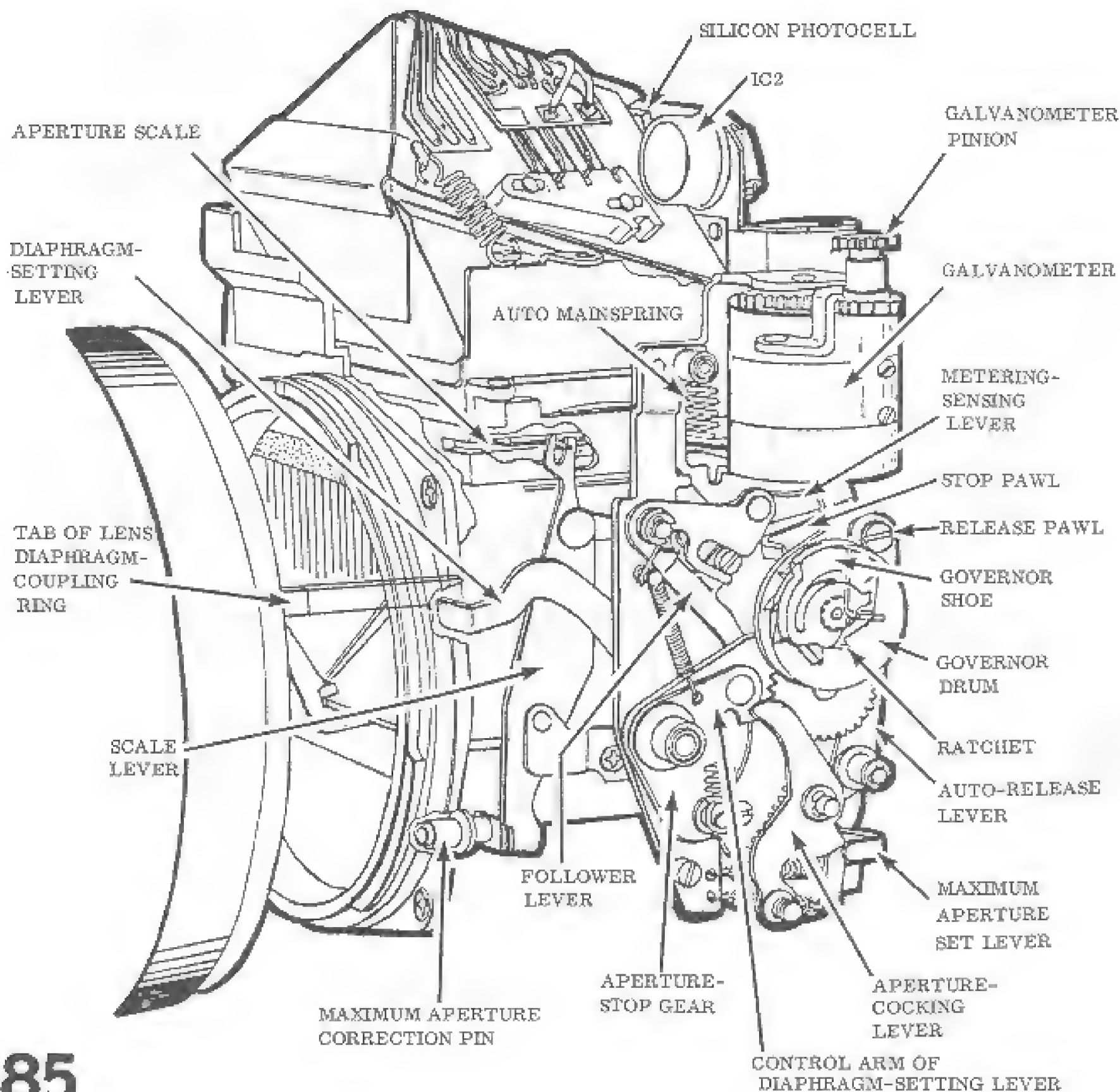
AUTO DIAPHRAGM-CONTROL UNIT TENSIONED

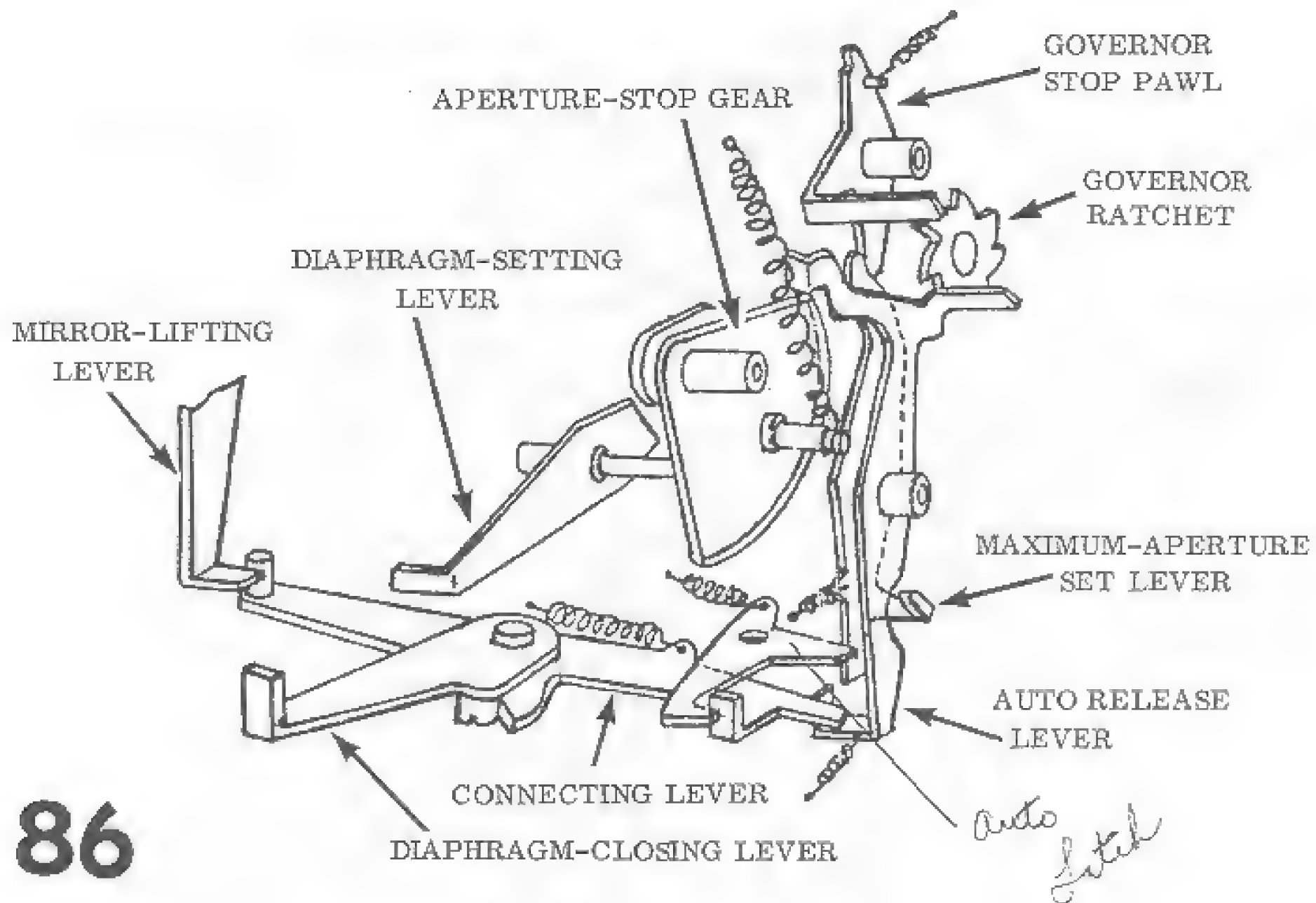


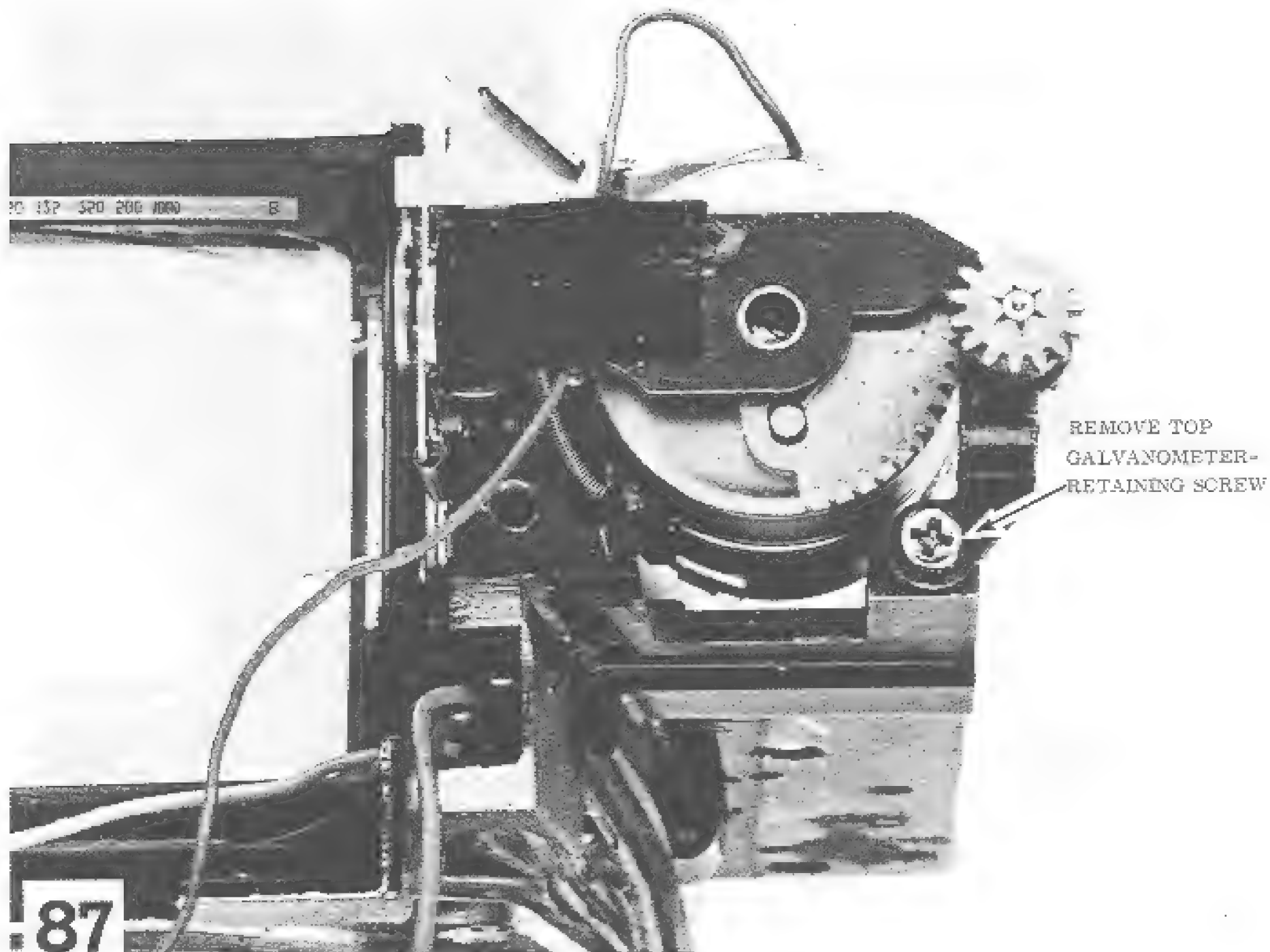


84

ECCENTRIC BETWEEN MIRROR-COCKING LEVER AND AUTO LINK -- ADJUST UNTIL THE RELEASE PAWL AND THE MIRROR-RELEASE LEVER ENGAGE SIMULTANEOUSLY

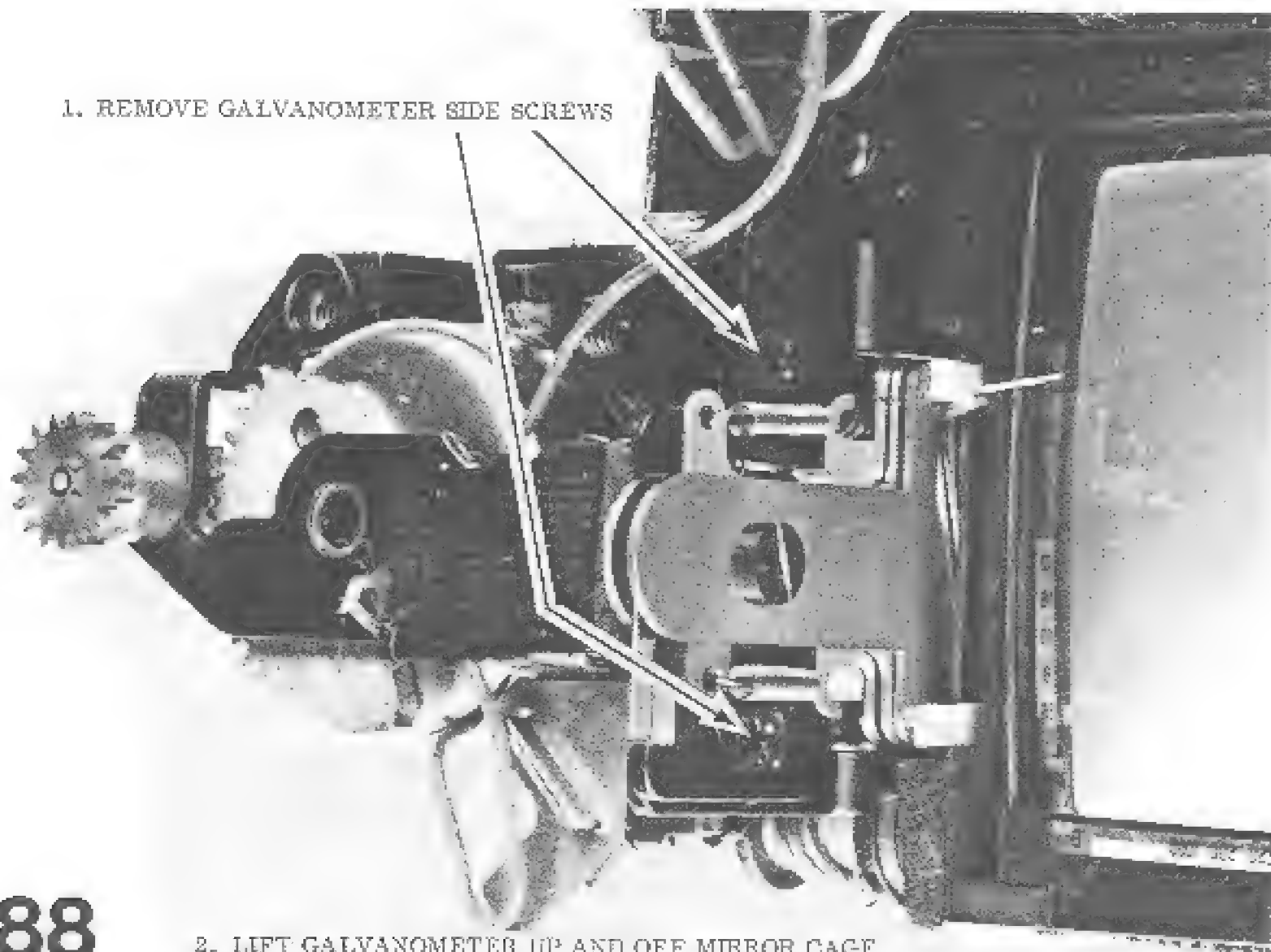






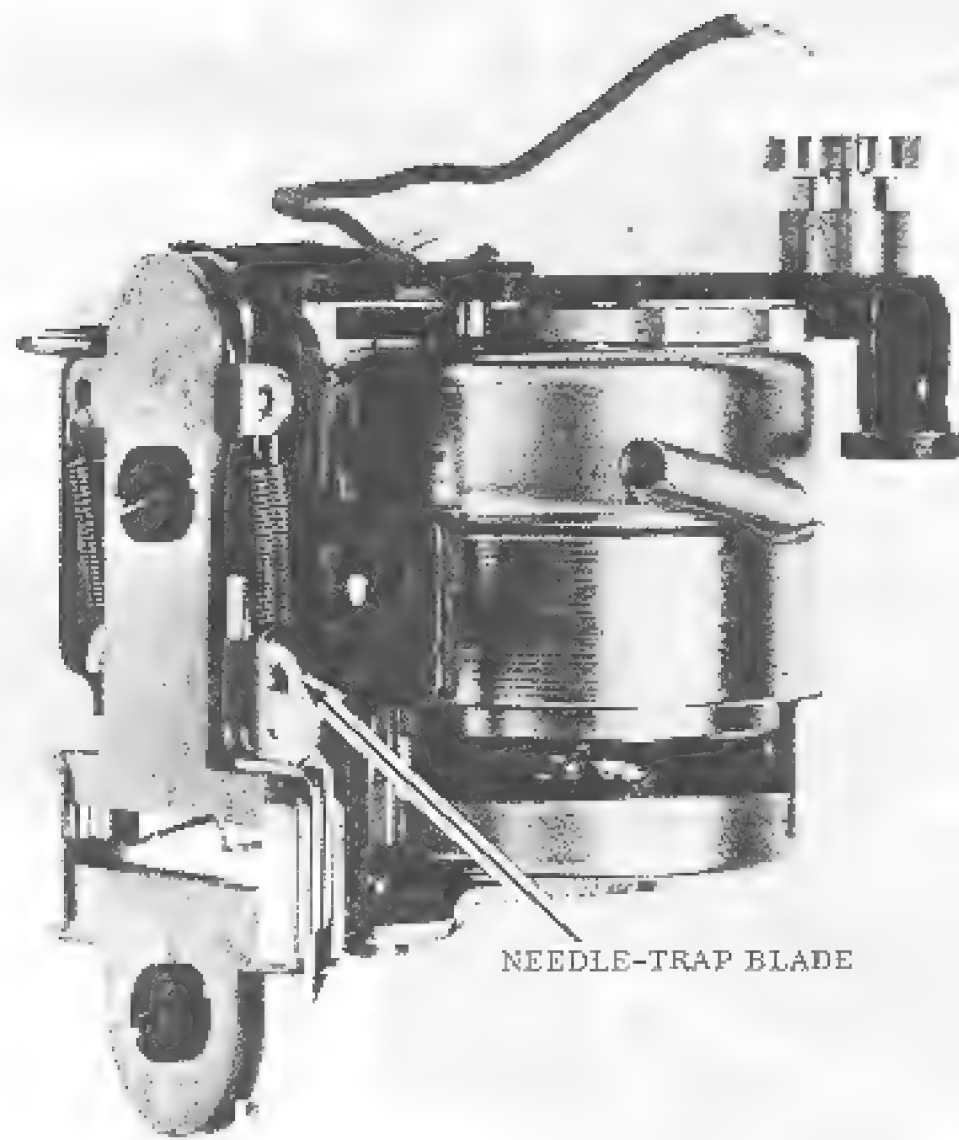


1. REMOVE GALVANOMETER SIDE SCREWS



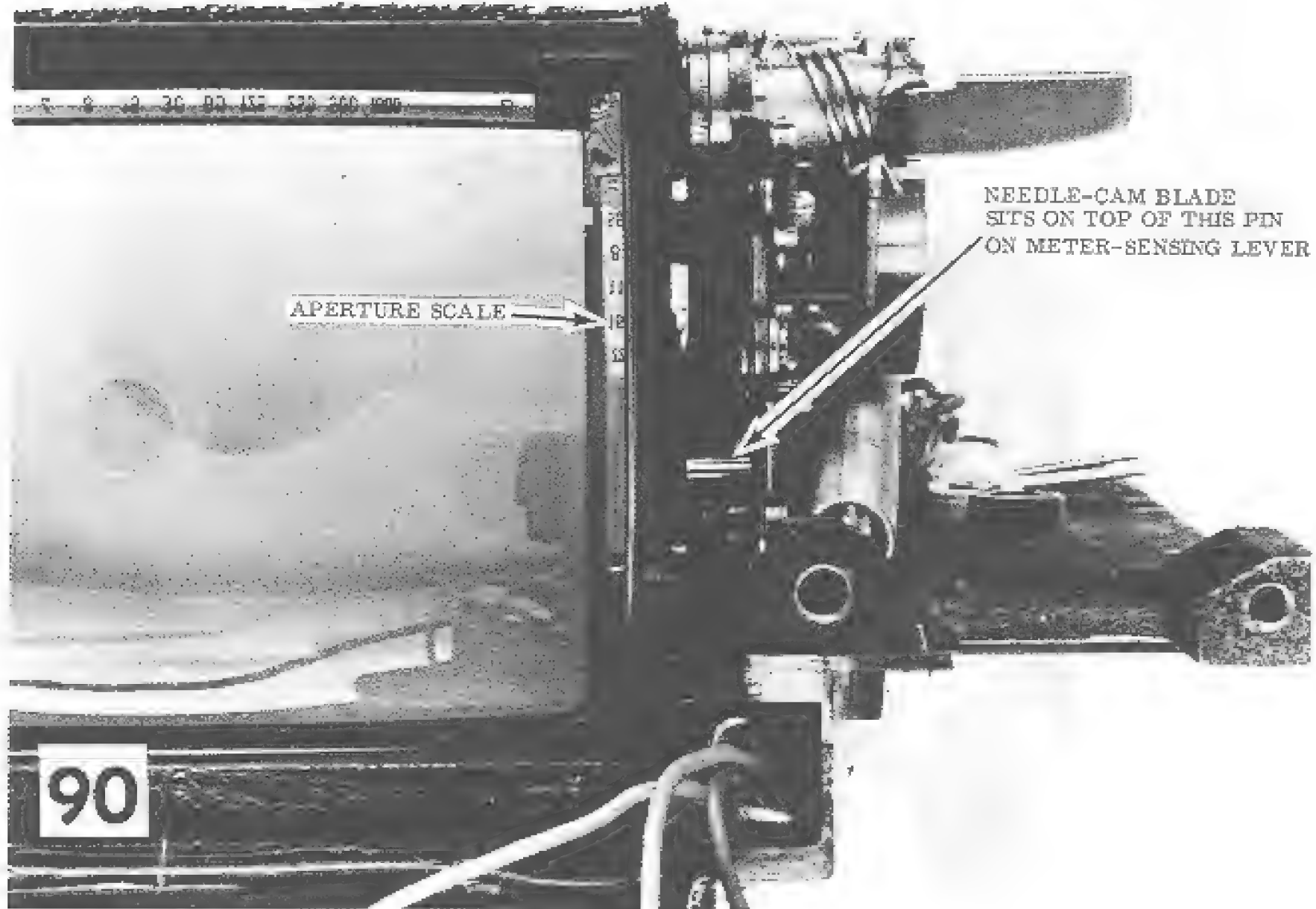
88

2. LIFT GALVANOMETER UP AND OFF MIRROR CAGE



NEEDLE-TRAP BLADE

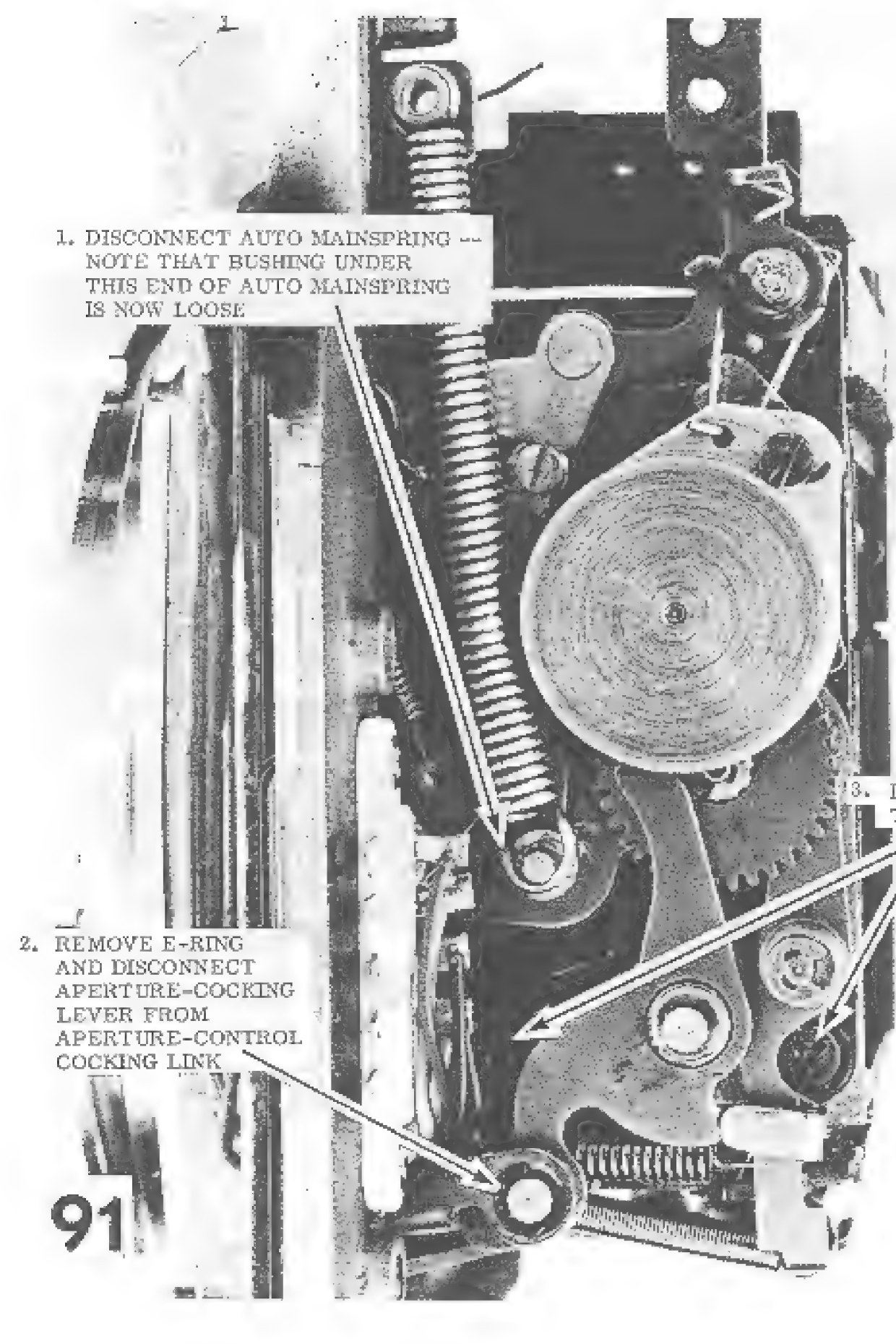
NEEDLE-CAM BLADE



APERTURE SCALE

NEEDLE-CAM BLADE  
SITS ON TOP OF THIS PIN  
ON METER-SENSING LEVER

90



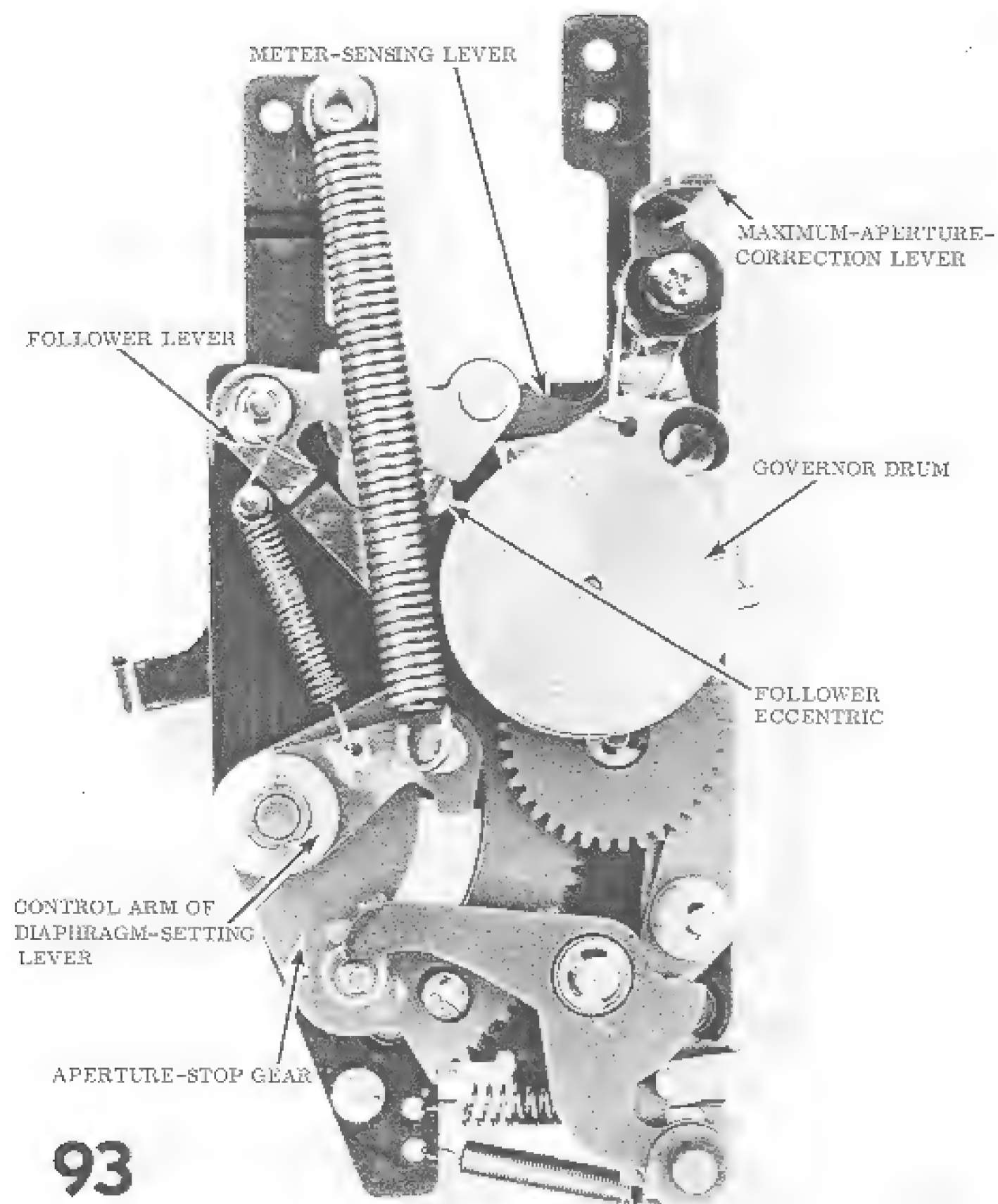
1. DISCONNECT AUTO MAINSPRING ---  
NOTE THAT BUSHING UNDER  
THIS END OF AUTO MAINSPRING  
IS NOW LOOSE

2. REMOVE E-RING  
AND DISCONNECT  
APERTURE-COCKING  
LEVER FROM  
APERTURE-CONTROL  
COCKING LINK

3. REMOVE  
TWO SCREWS

1. REMOVE THIRD SCREW HOLDING AUTO  
DIAPHRAGM-CONTROL UNIT FROM INSIDE MIRROR CAGE

MOVE APERTURE-STOP GEAR TO THE COCKED POSITION --  
THEN, HOLD DOWN DIAPHRAGM-SETTING LEVER AND REMOVE  
AUTO DIAPHRAGM-CONTROL UNIT -- AS YOU REMOVE UNIT,  
DISCONNECT SCALE-LEVER LINK FROM MAXIMUM-APERTURE  
COUPLING LEVER





*Clear the Assembly*

MAXIMUM-APERTURE  
COUPLING LEVER THAT  
HOOKS TO LINK OF  
SCALE LEVER

PIN ON METER-  
SENSING LEVER

DIAPHRAGM-  
SETTING  
LEVER

CAM ON BACK OF  
APERTURE-STOP  
GEAR THAT  
OPERATES  
FOLLOWER LEVER

MAXIMUM-APERTURE-  
SET-LEVER SPRING

AUTO-RELEASE-LEVER SPRING

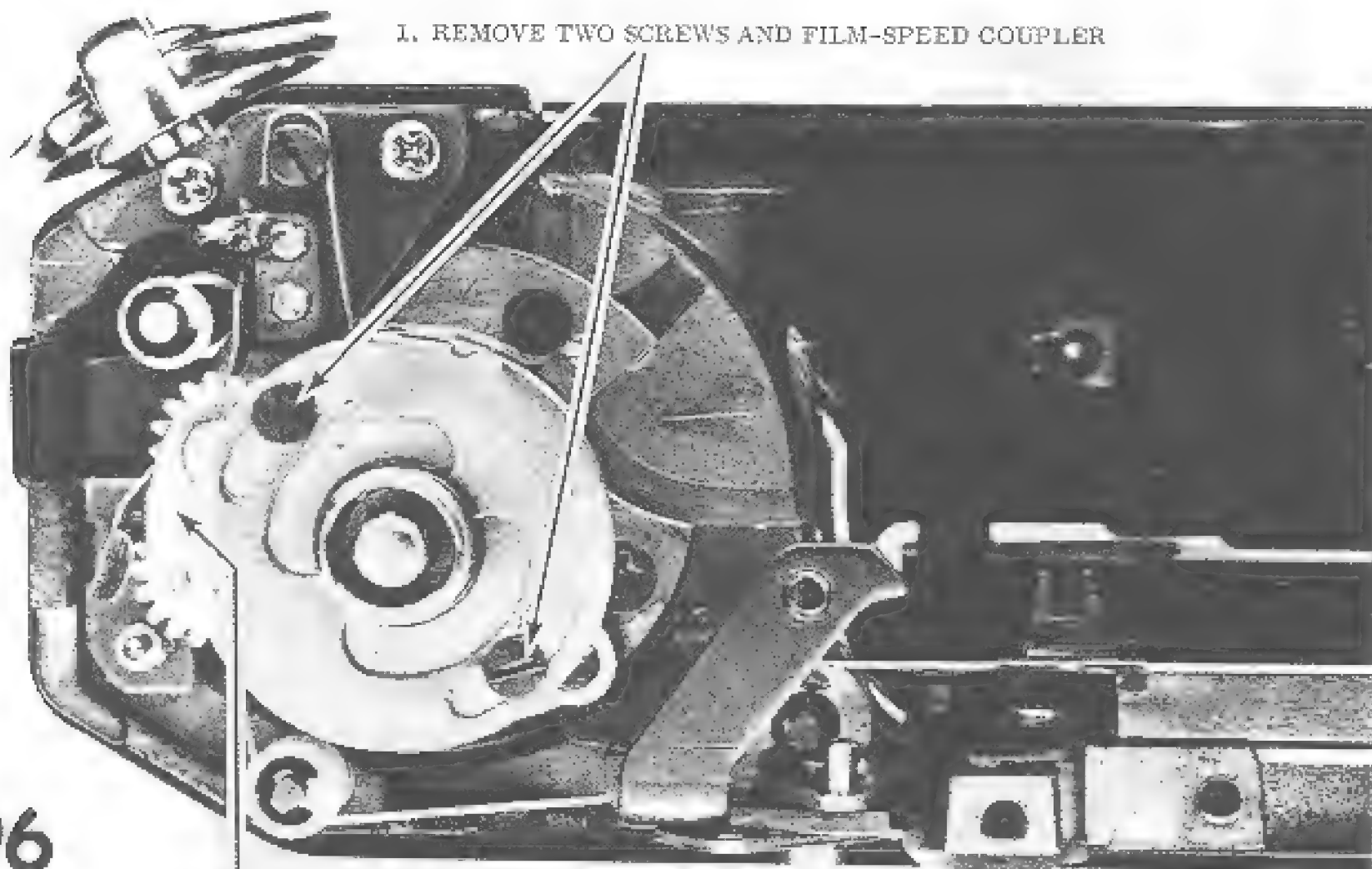
SCALE LEVER COUPLES TO  
APERTURE SCALE HERE

SCALE-LEVER LINK

SCALE LEVER

*Scribe  
bracket before  
removing*

1. REMOVE TWO SCREWS AND FILM-SPEED COUPLER

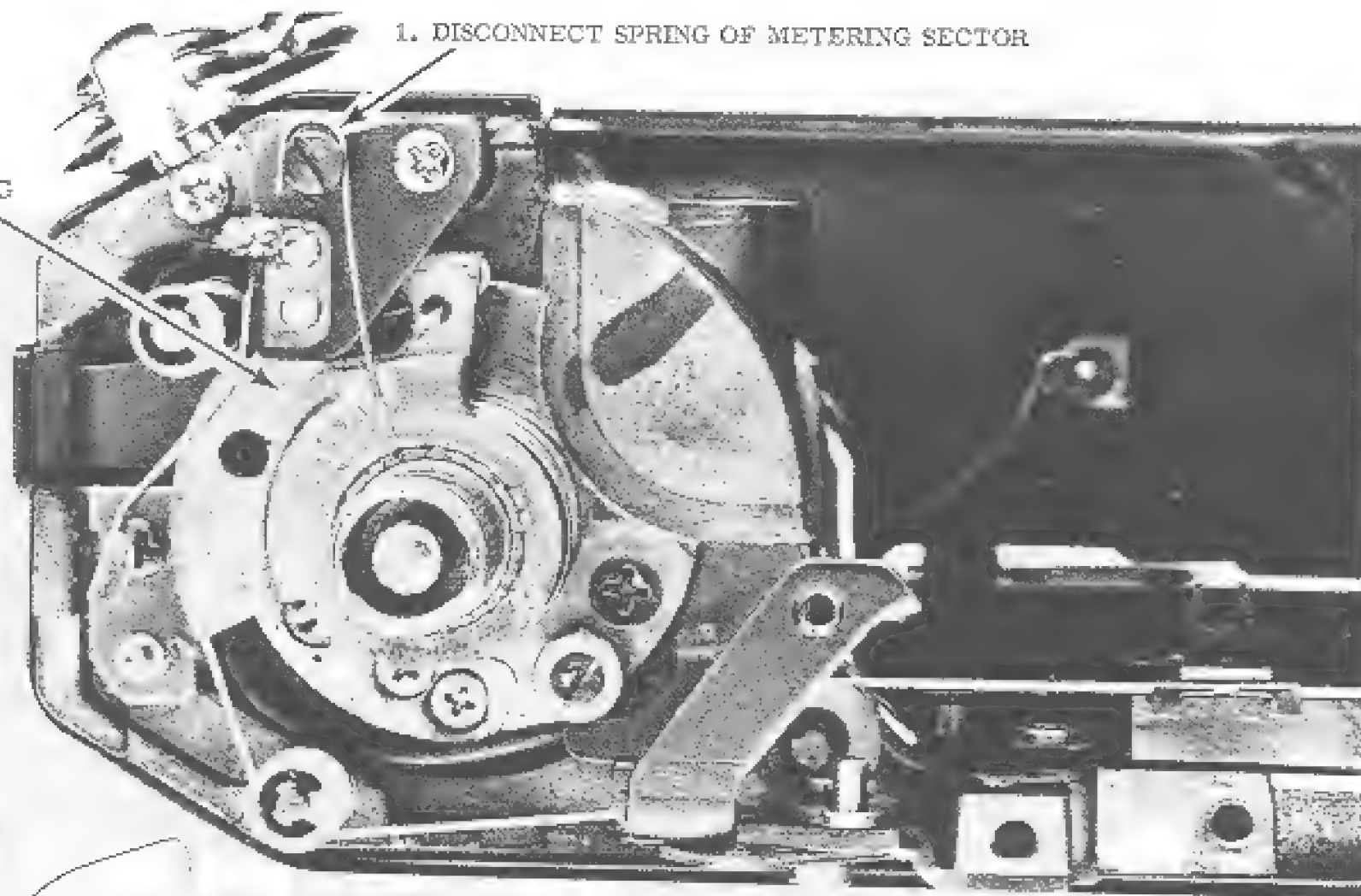


96

2. LIFT OFF FILM-SPEED GEAR UNIT  
(SPACER UNDERNEATH)

1. DISCONNECT SPRING OF METERING SECTOR

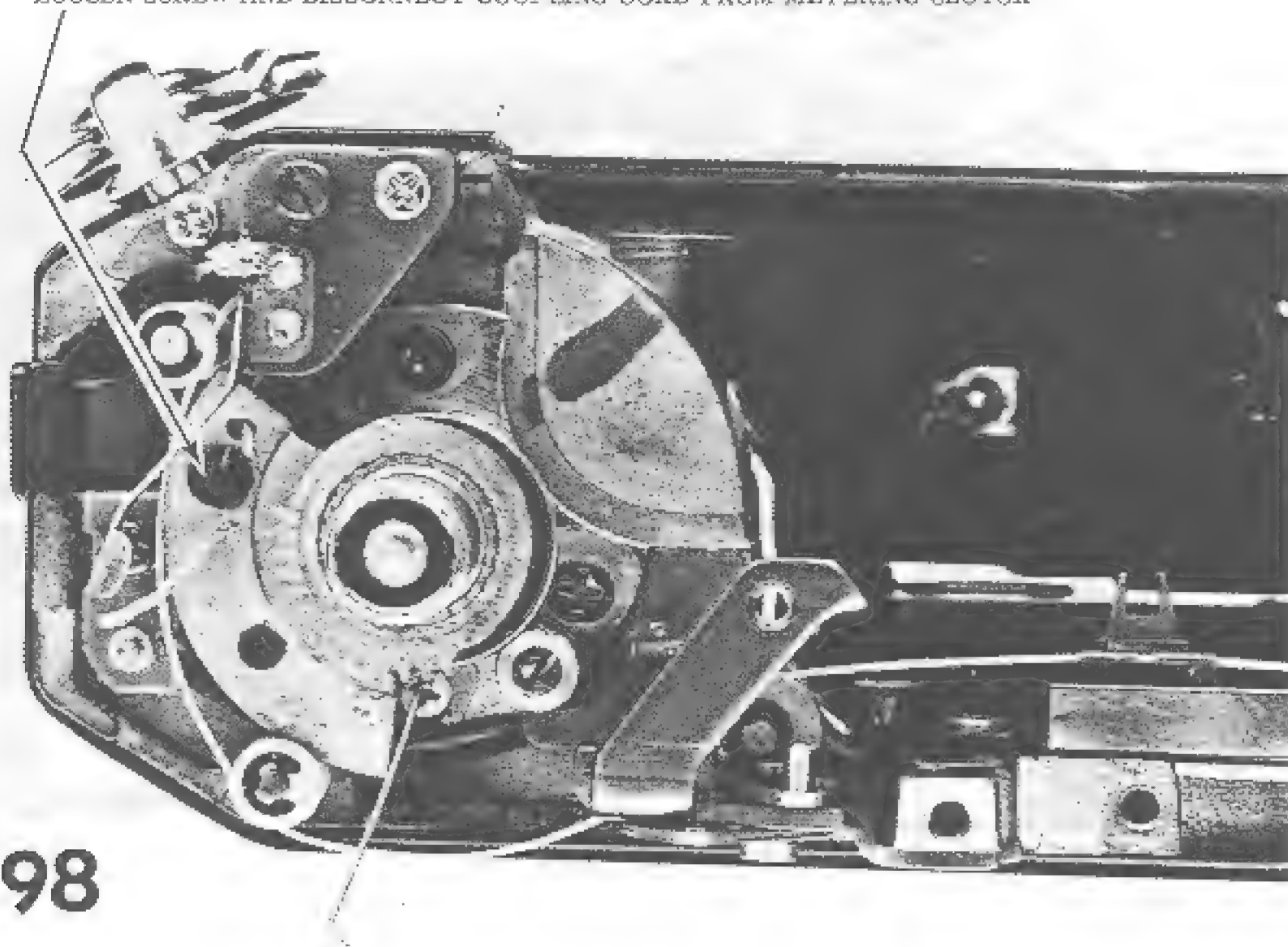
METERING  
SECTOR



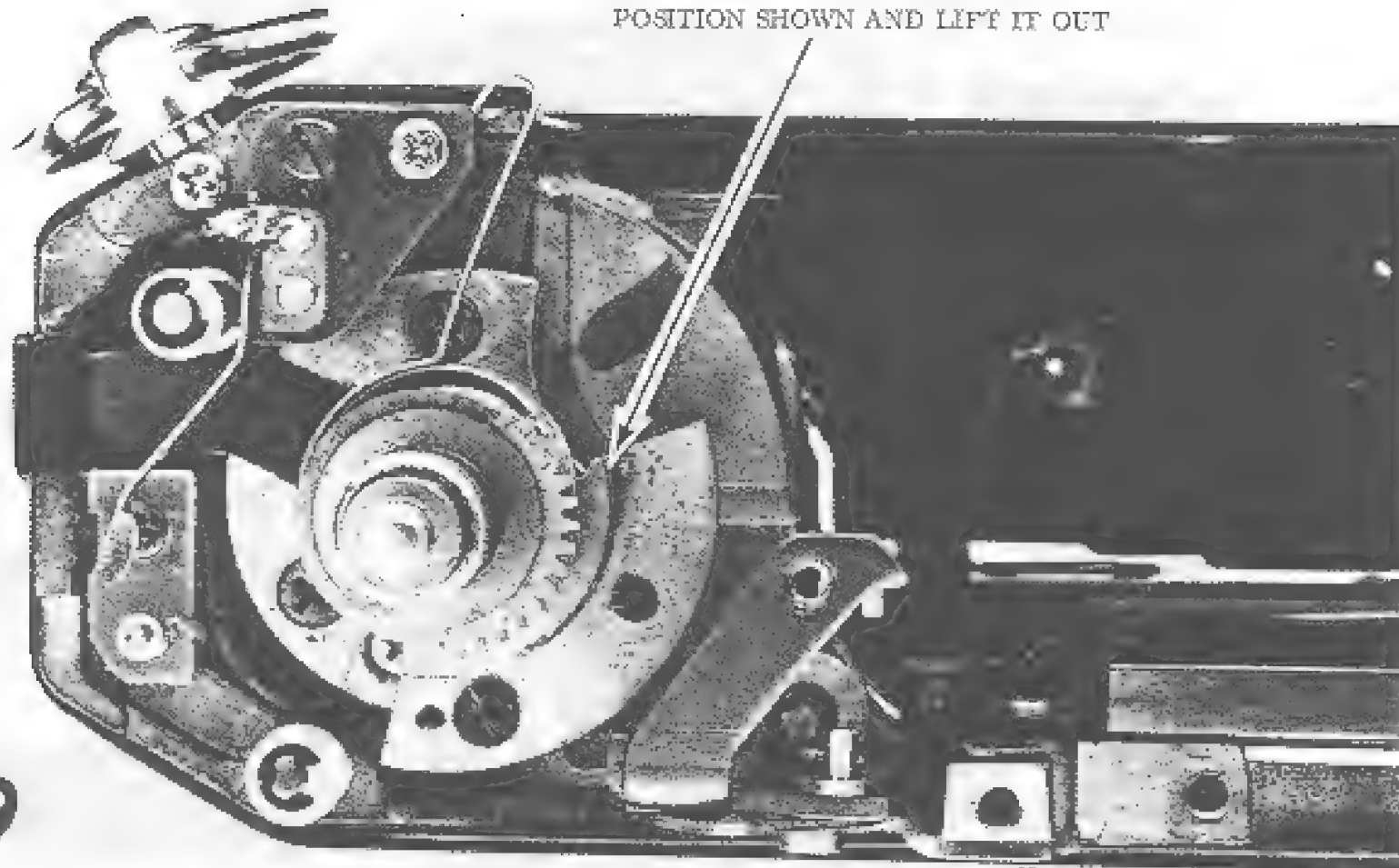
97

NOTE: ON REASSEMBLY, APPLY ONE FULL TURN  
OF TENSION TO THE METERING-SECTOR SPRING

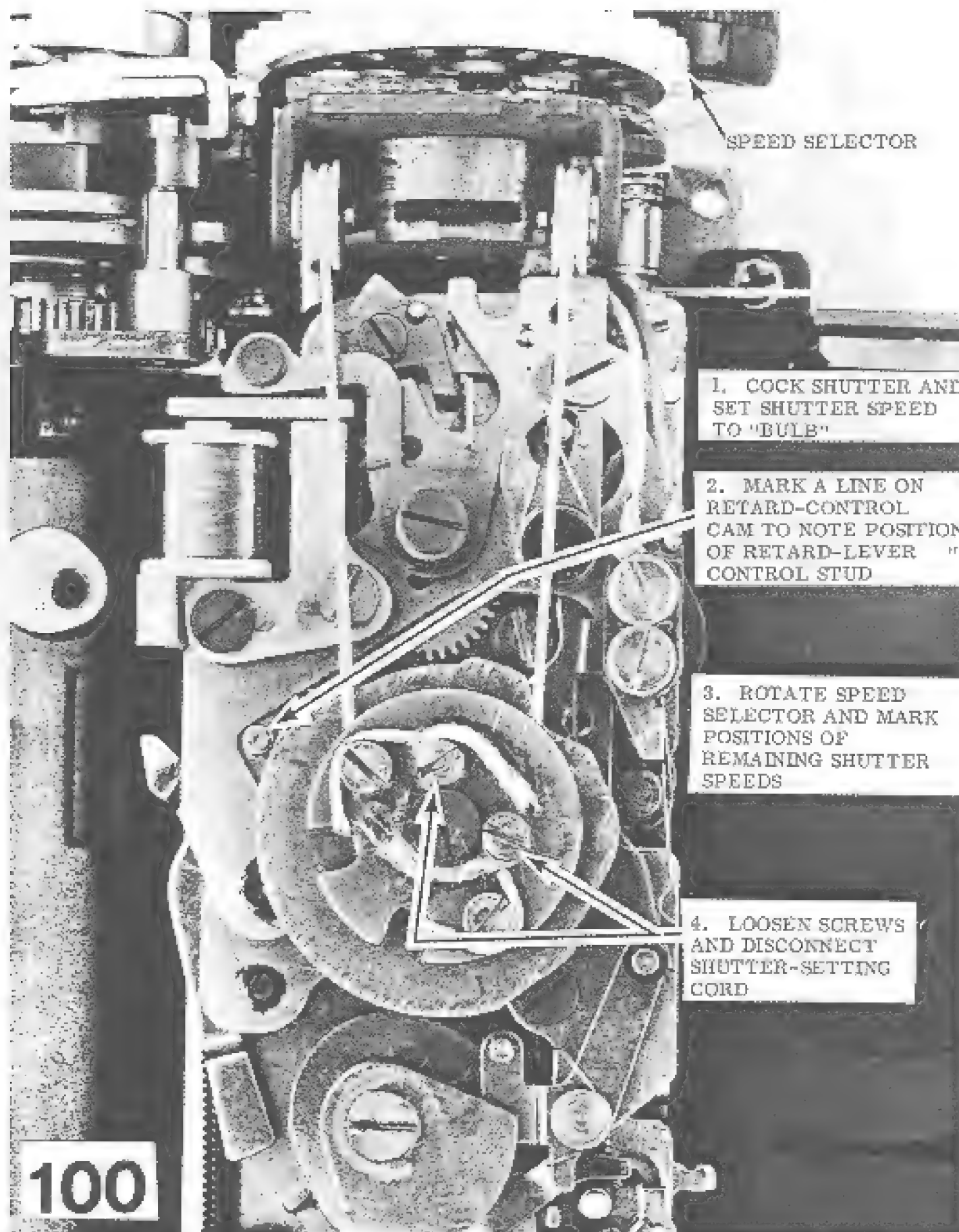
LOOSEN SCREW AND DISCONNECT COUPLING CORD FROM METERING SECTOR



TURN METERING SECTOR TO  
POSITION SHOWN AND LIFT IT OUT







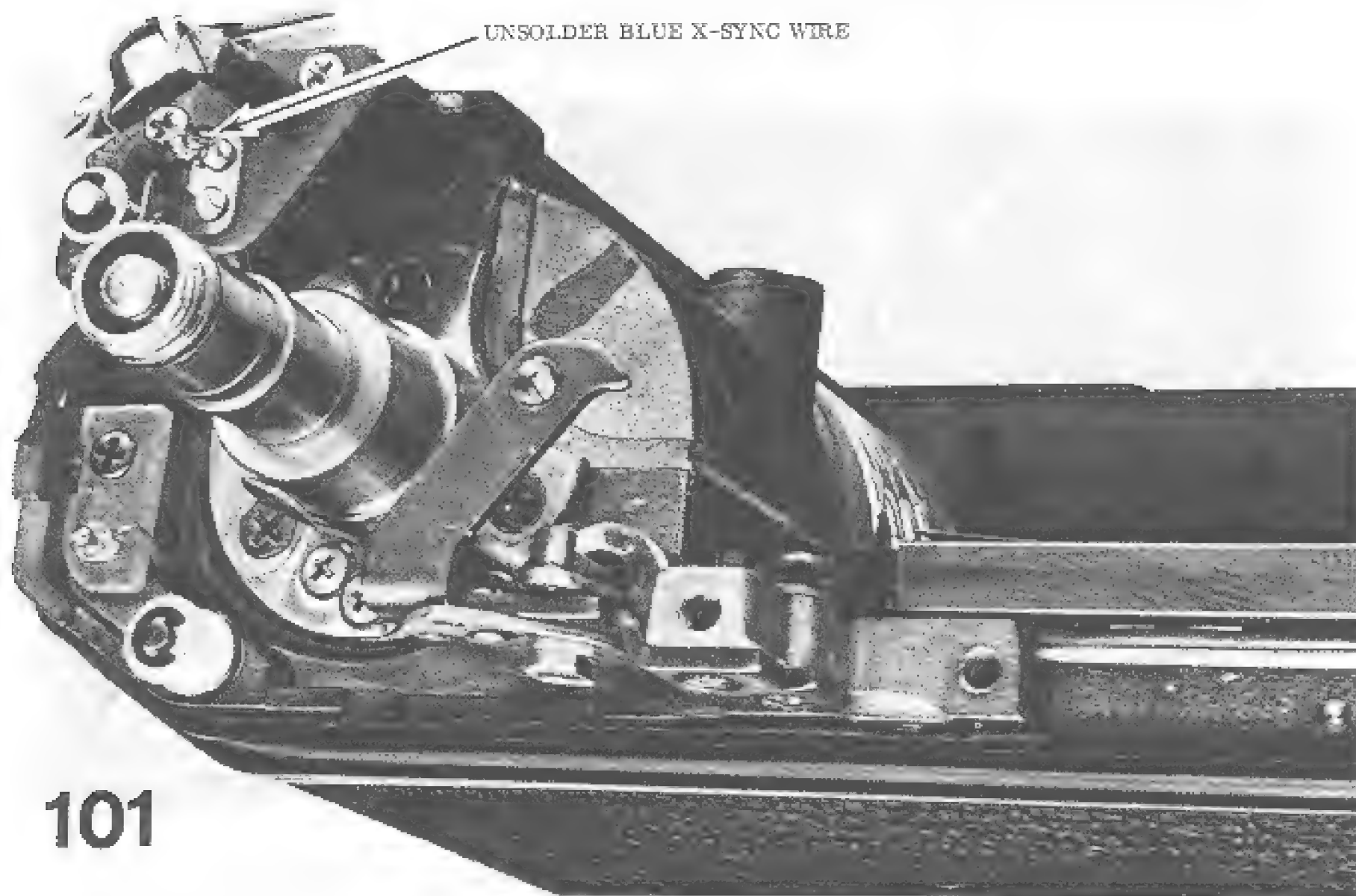
SPEED SELECTOR

1. COCK SHUTTER AND  
SET SHUTTER SPEED  
TO "BULB"

2. MARK A LINE ON  
RETARD-CONTROL  
CAM TO NOTE POSITION  
OF RETARD-LEVER " "  
CONTROL STUD

3. ROTATE SPEED  
SELECTOR AND MARK  
POSITIONS OF  
REMAINING SHUTTER  
SPEEDS

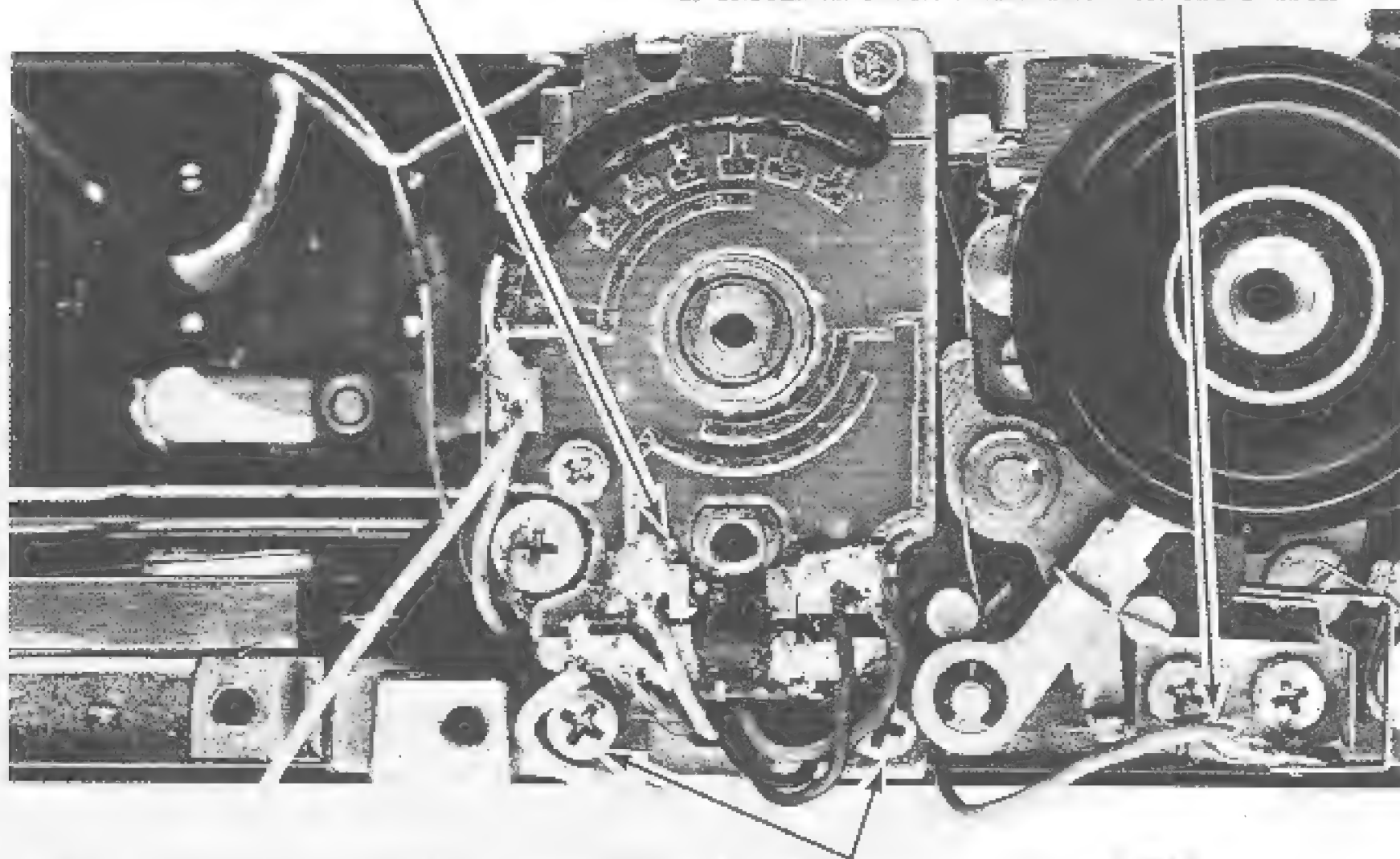
4. LOOSEN SCREWS  
AND DISCONNECT  
SHUTTER-SETTING  
CORD



101

1. UNSOLDER WIRES FROM IC1 (SEE NEXT ILLUSTRATION)

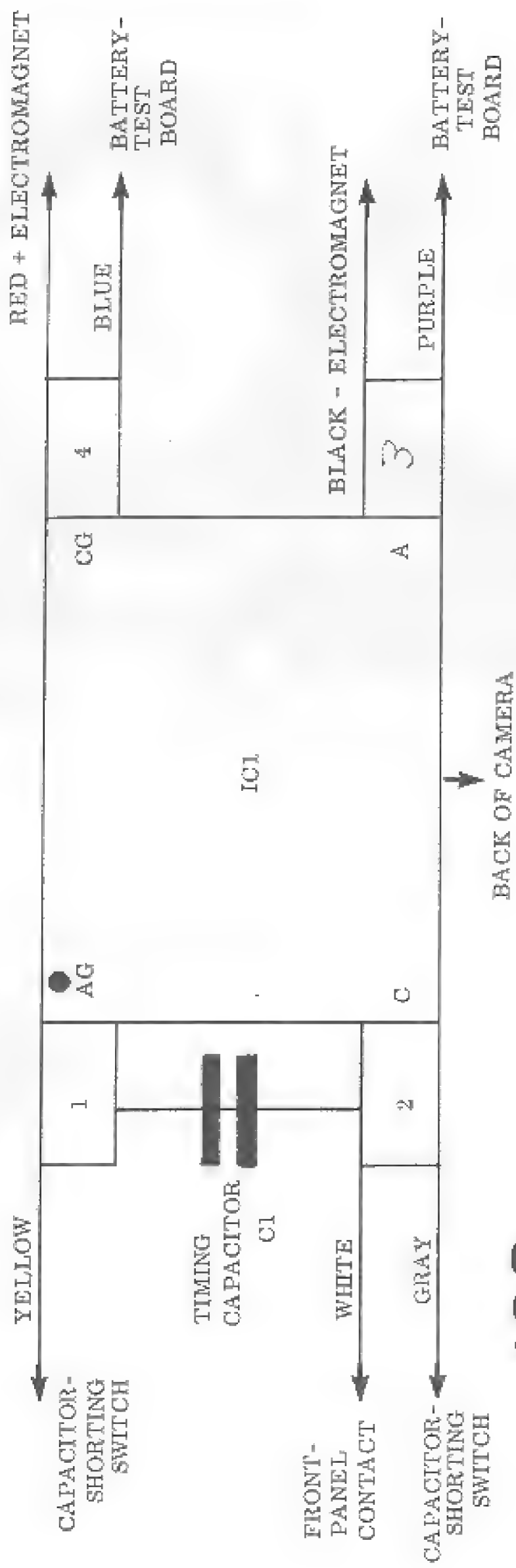
2. UNSOLDER ORANGE WIRE FROM ON-OFF SWITCH

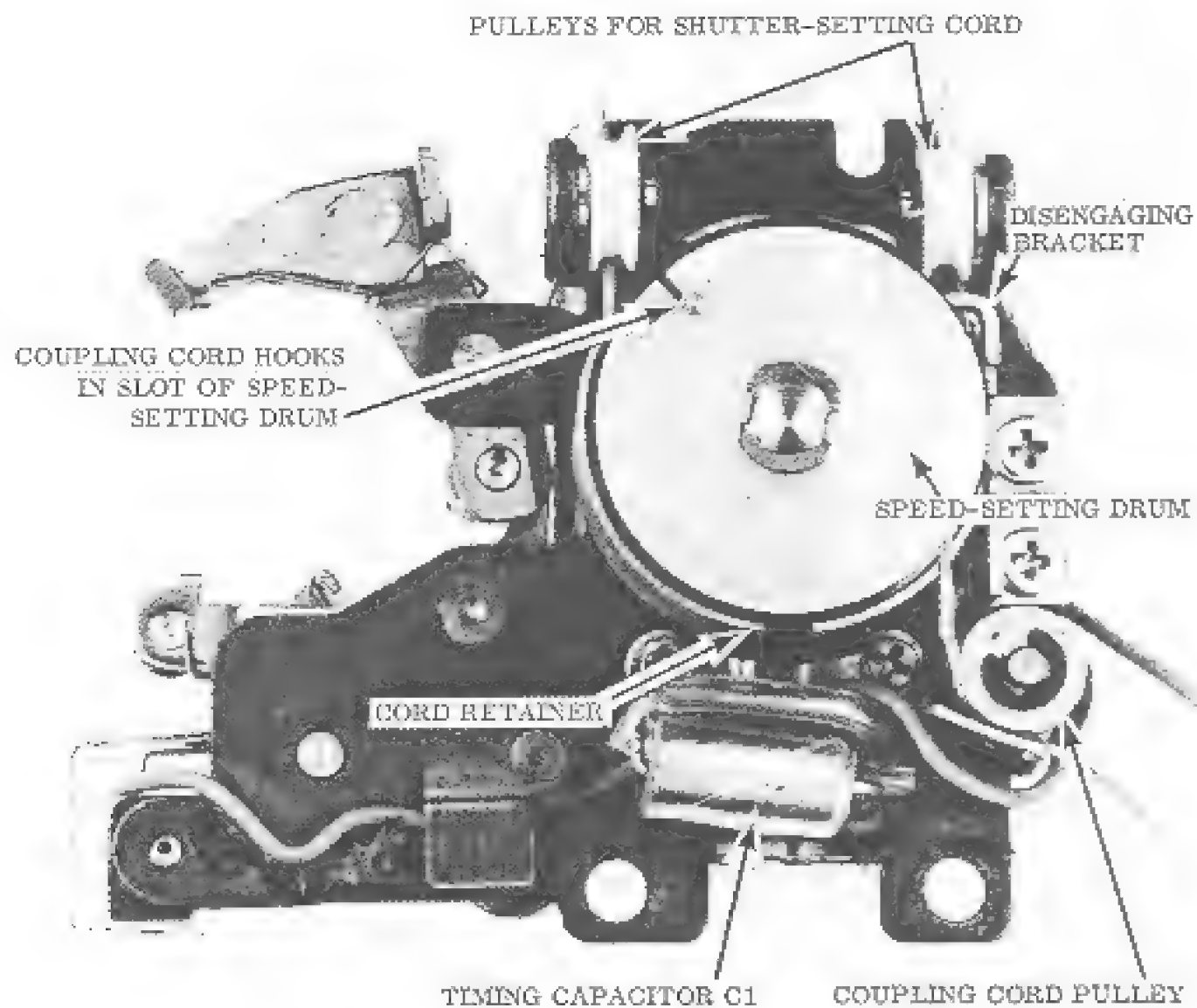


3. REMOVE TWO SCREWS AND LIFT OUT SPEED-DRUM ASSEMBLY

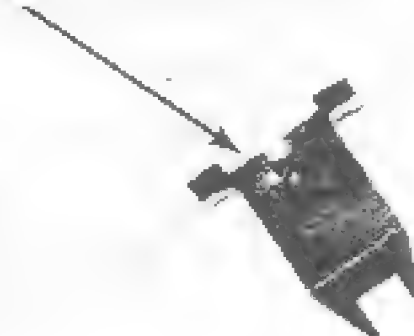
102

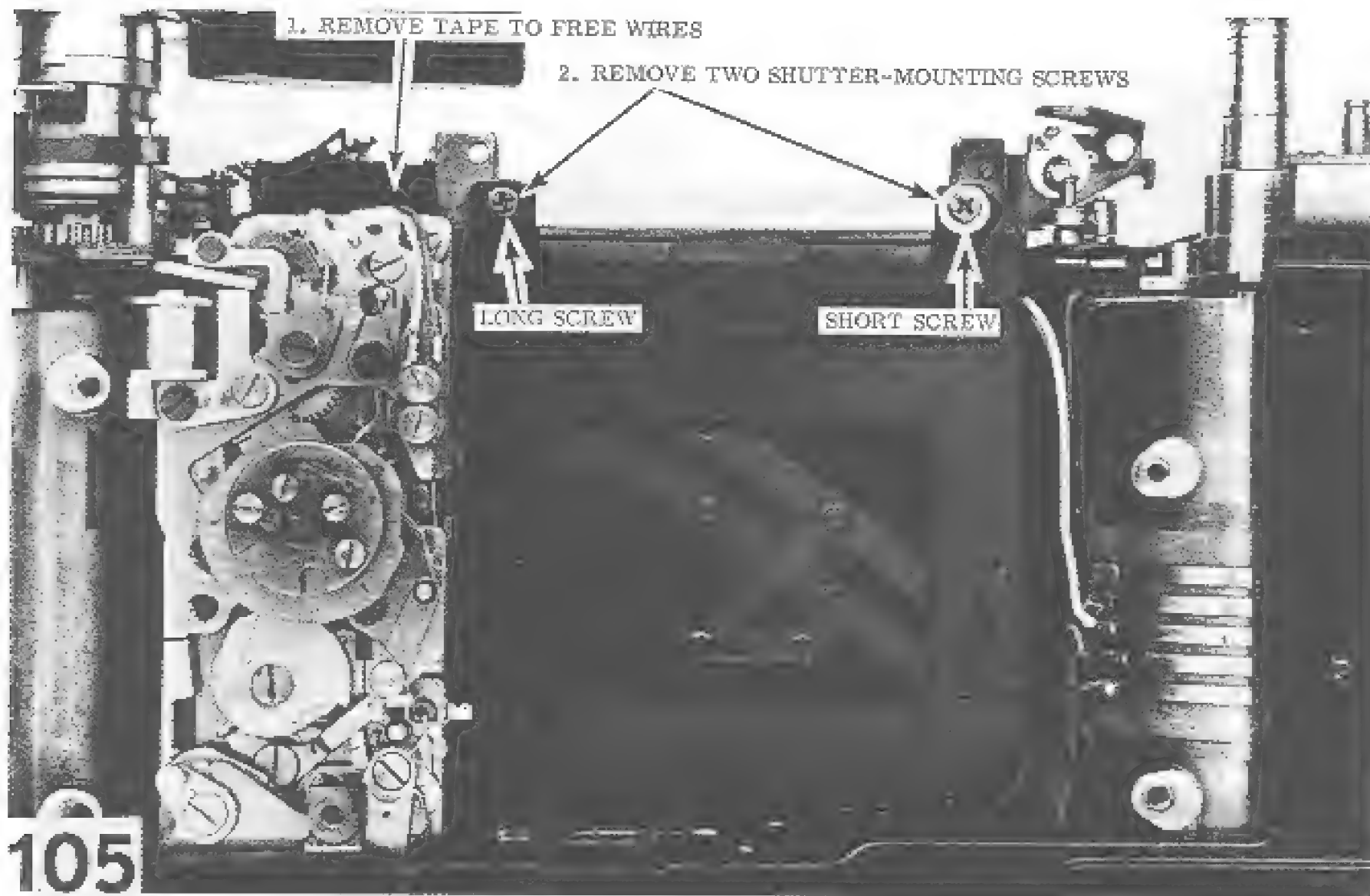
NOTE: SPEED SELECTOR DOES NOT HAVE TO BE REMOVED - WE'VE REMOVED IT HERE FOR ILLUSTRATION PURPOSES



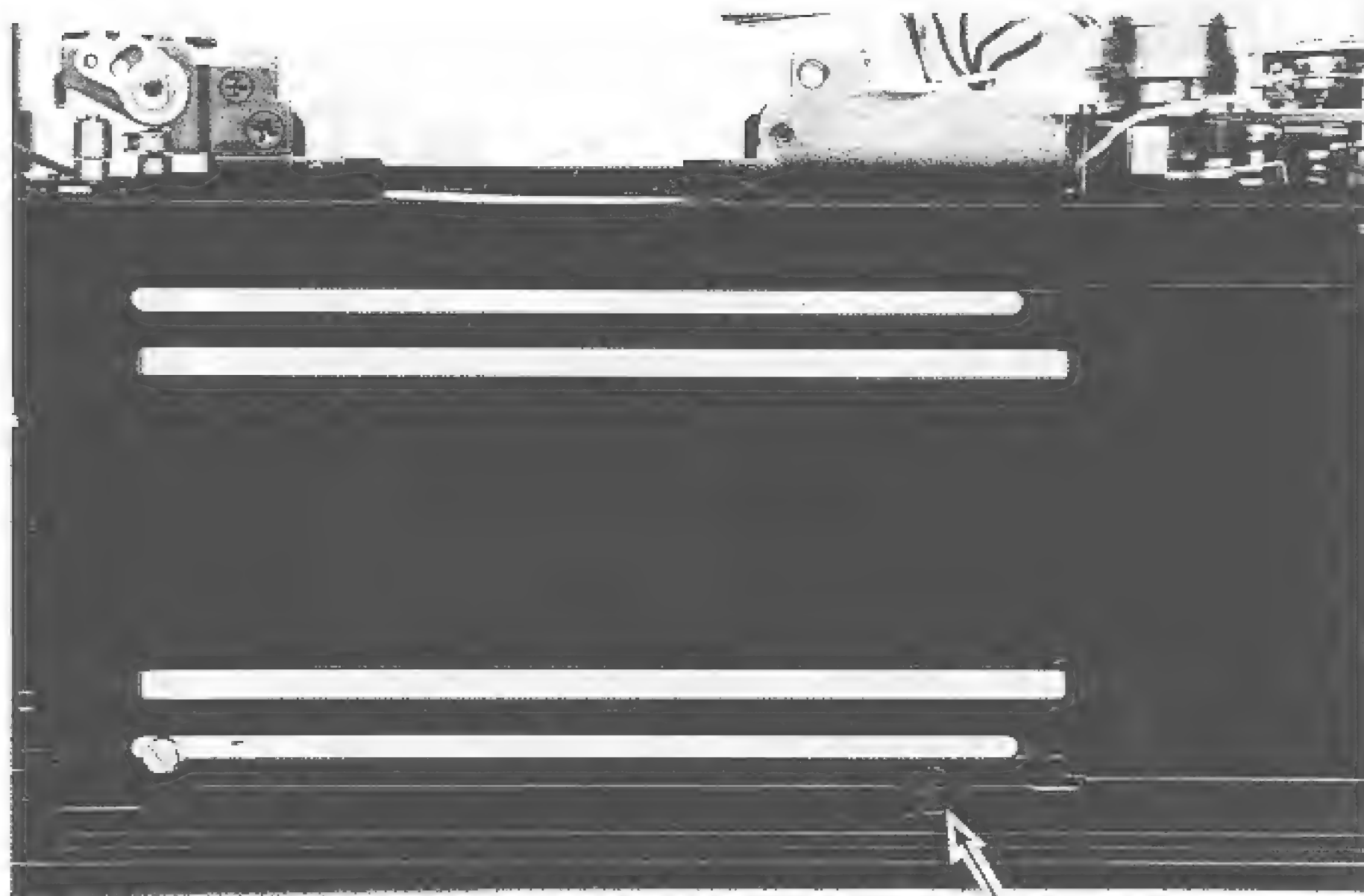


SHUTTER-SPEED INDICATOR







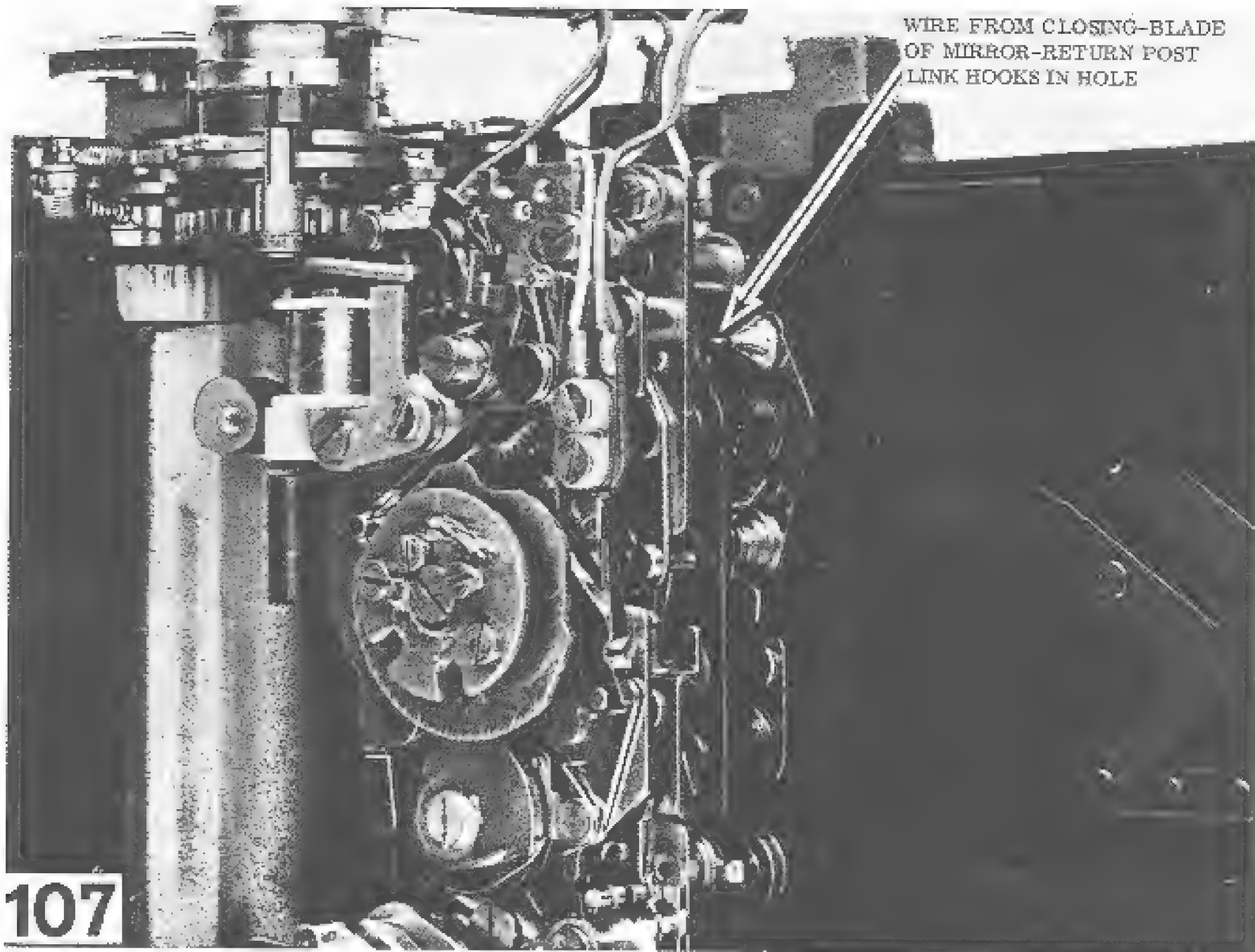


106

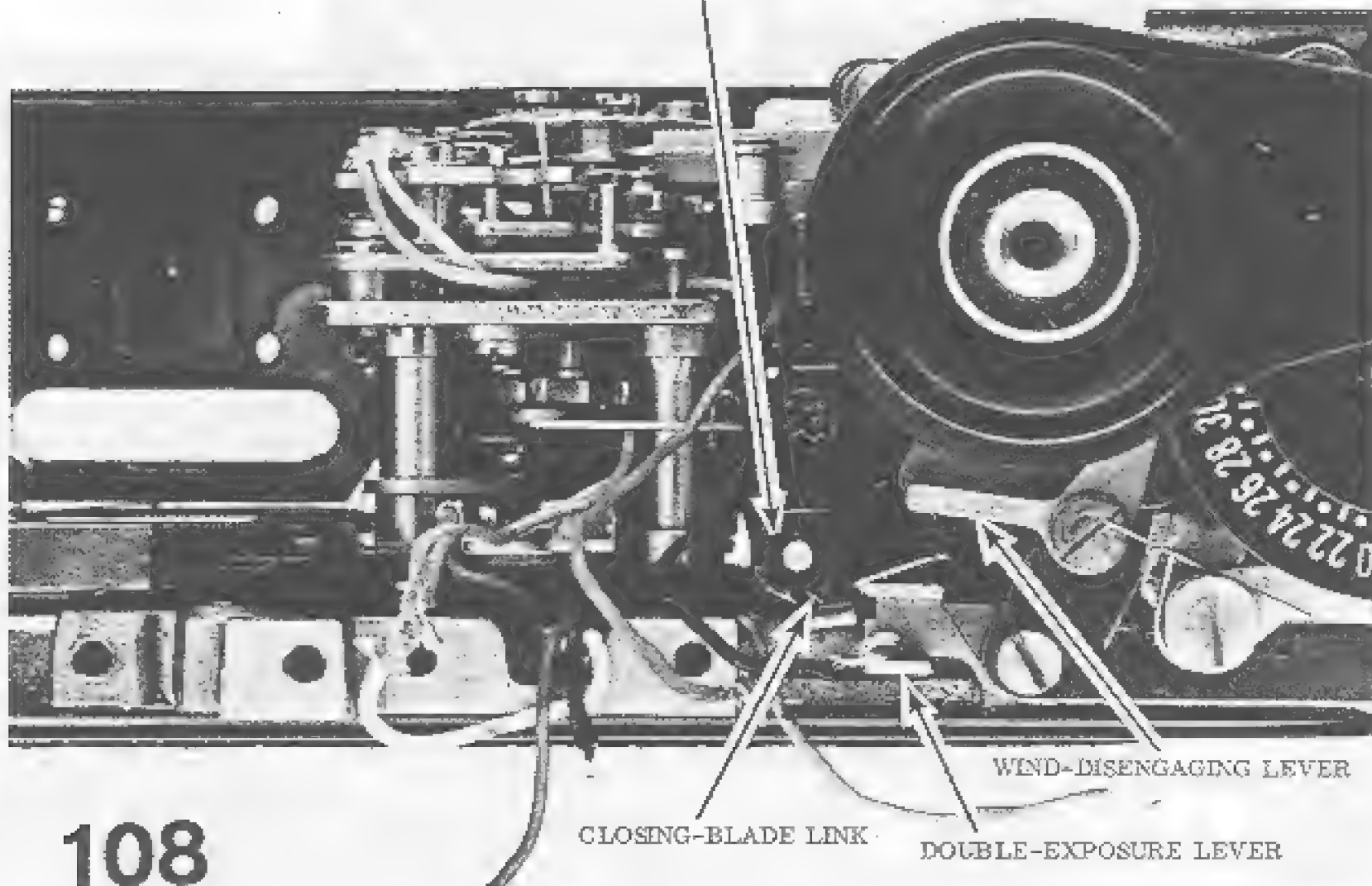
REMOVE REAR SHUTTER-MOUNTING SCREW

WIRE FROM CLOSING-BLADE  
OF MIRROR-RETURN POST  
LINK HOOKS IN HOLE

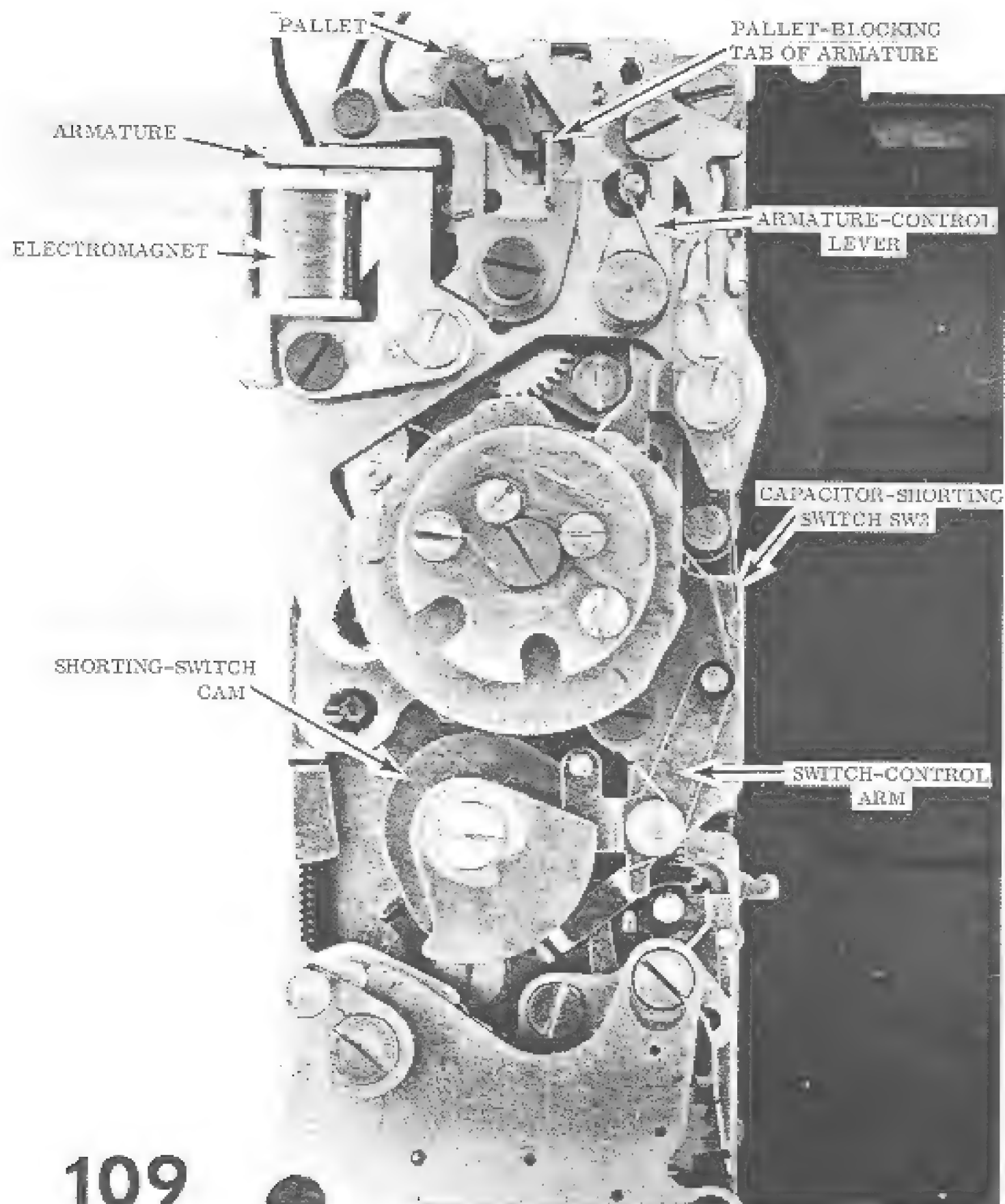
107

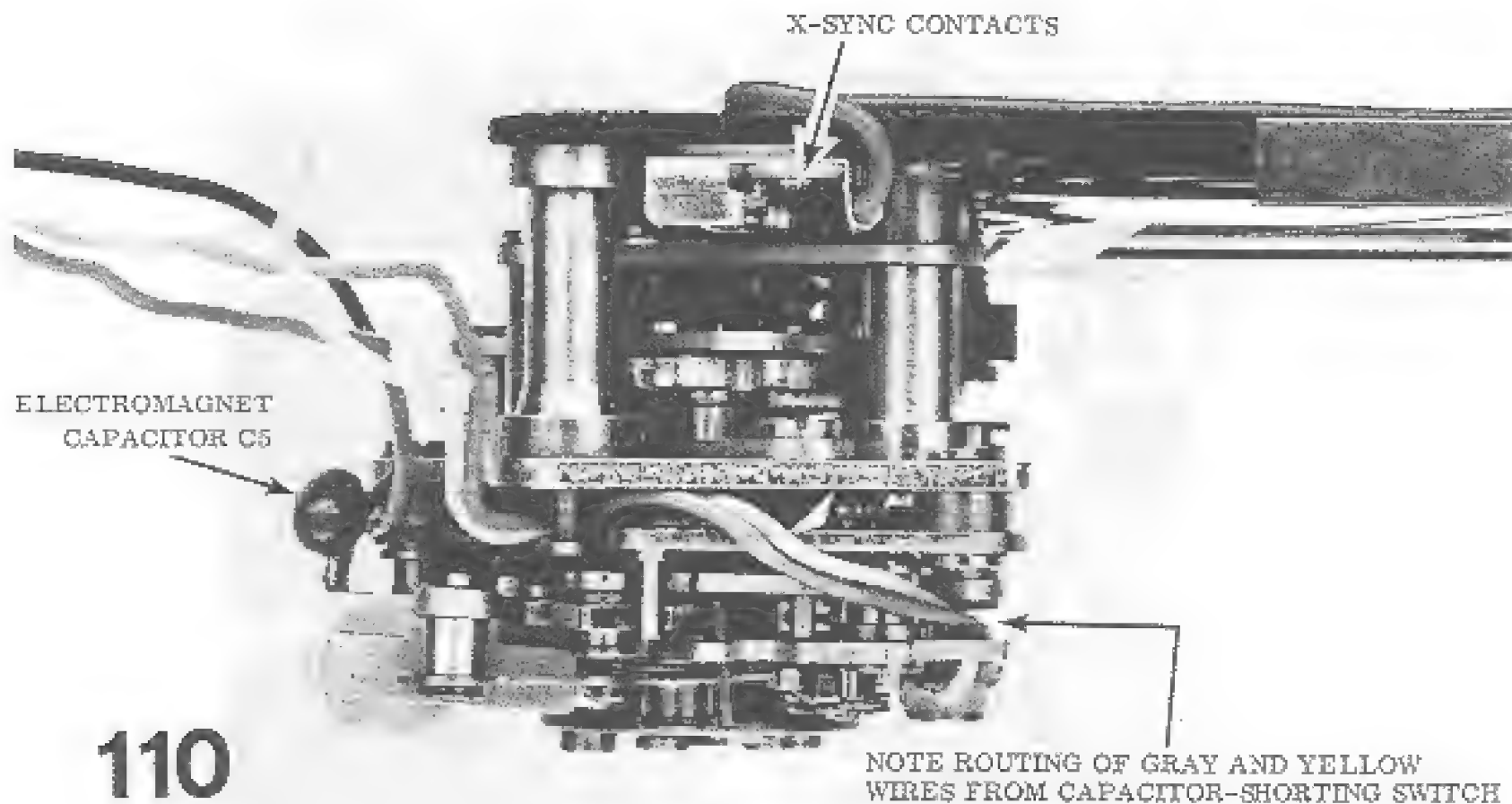


REMOVE E-RING AND LIFT OFF CLOSING-BLADE  
LINK AS YOU LIFT OUT SHUTTER



108





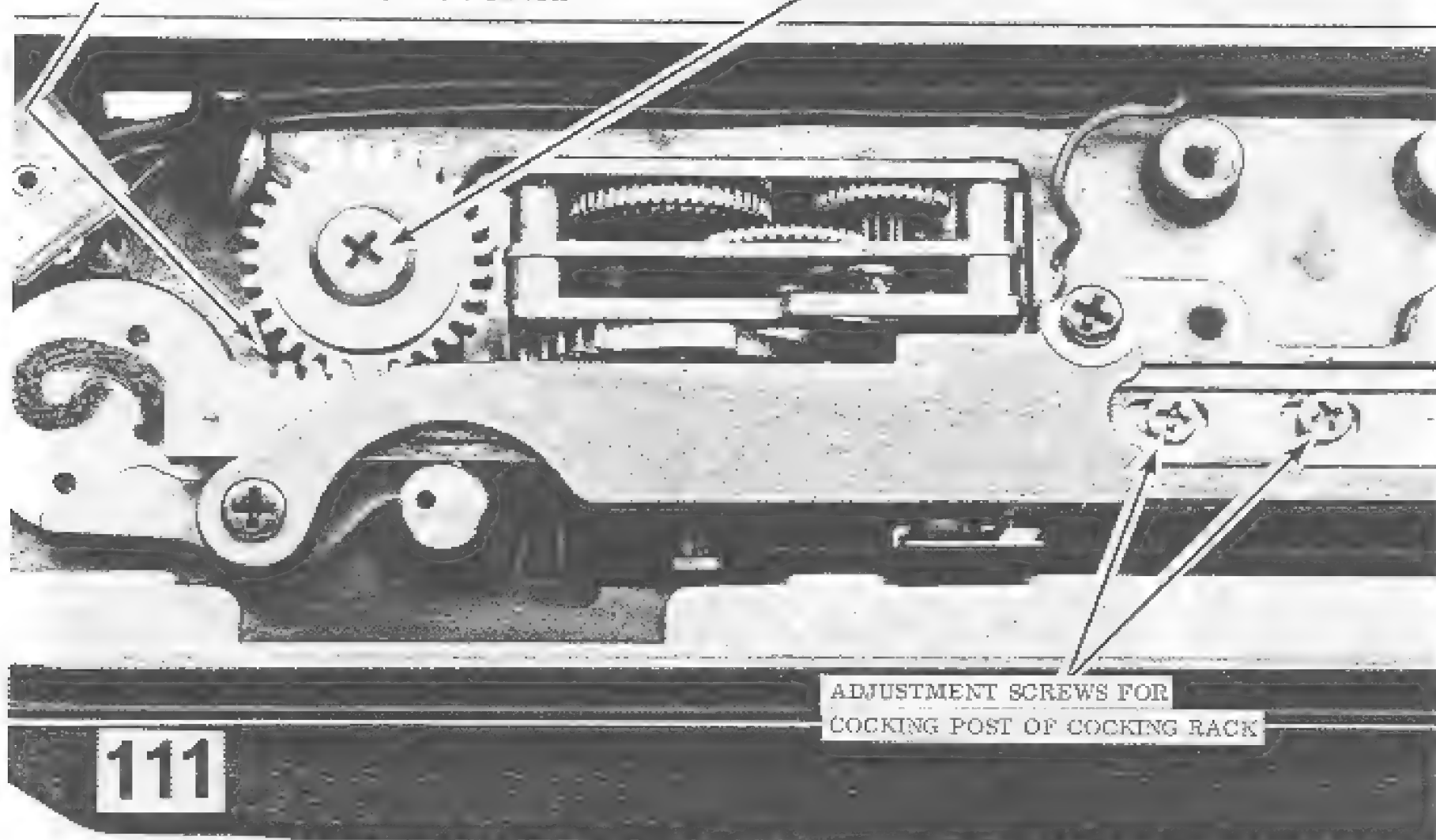
*Modification*



0.1  $\mu$ F

ENGAGEMENT OF COCKING RACK WITH  
WIND-SHAFT GEAR -- 7 1/2 TO 8 TEETH

LEFT-HAND SCREW



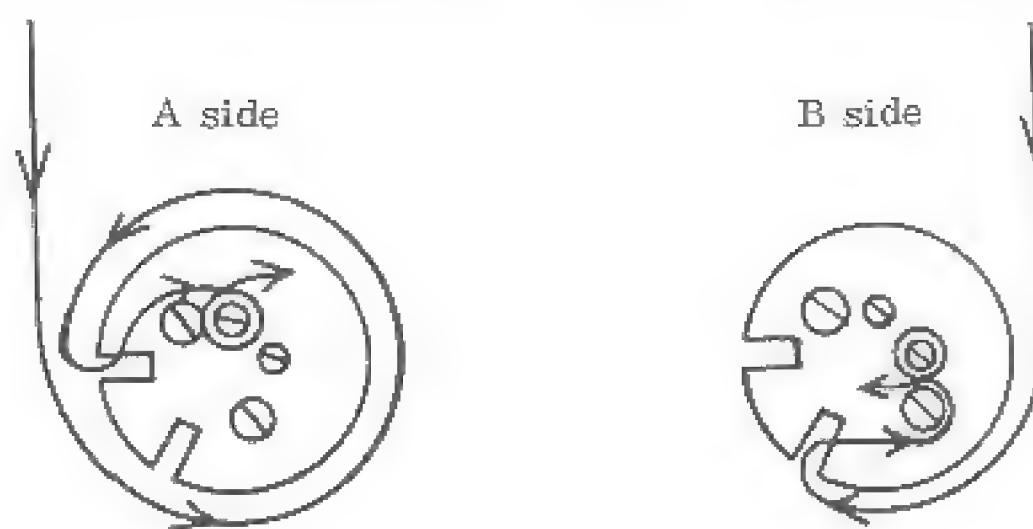
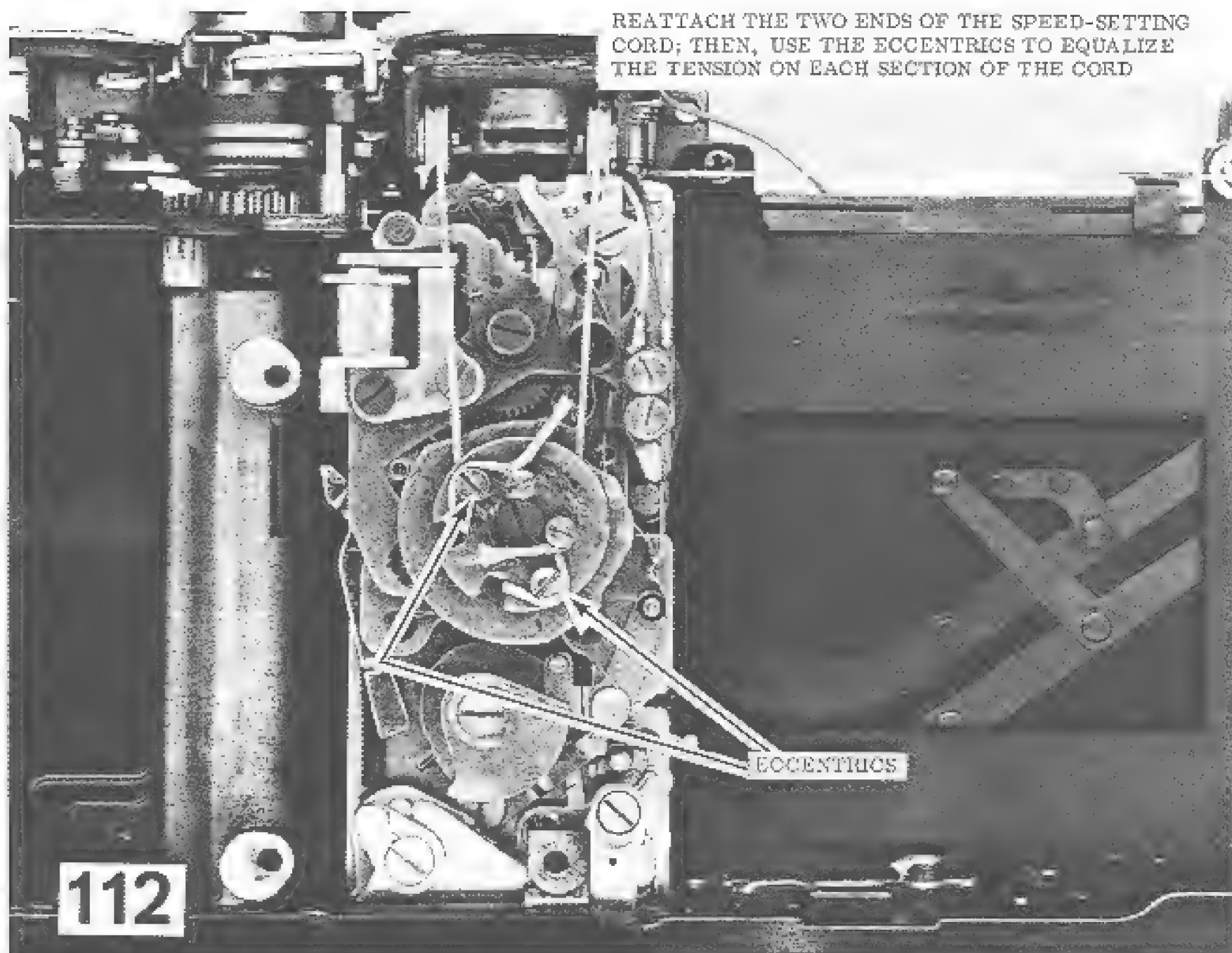
ADJUSTMENT SCREWS FOR  
COCKING POST OF COCKING RACK

111

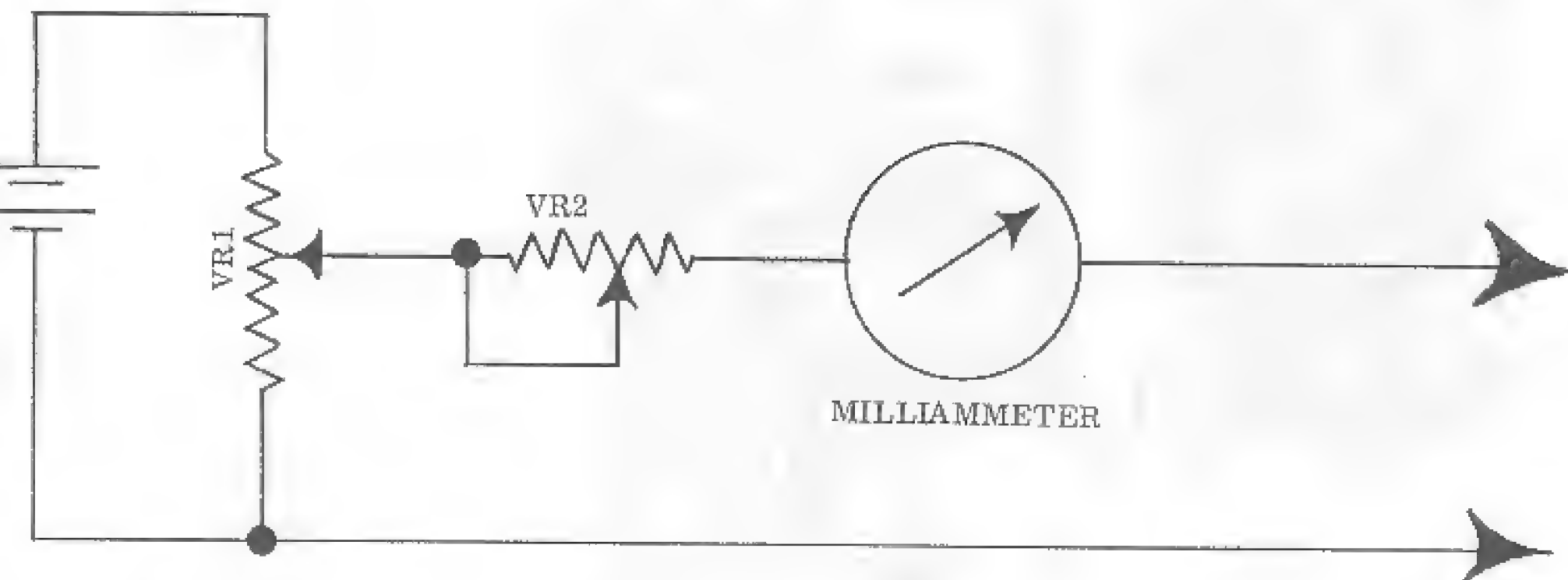
if shutter doesn't cock or advance won't come  
back Take off left hand screw, take off  
gear + replace 180° make 1/2 tooth adjustment



REATTACH THE TWO ENDS OF THE SPEED-SETTING  
CORD; THEN, USE THE ECCENTRICS TO EQUALIZE  
THE TENSION ON EACH SECTION OF THE CORD

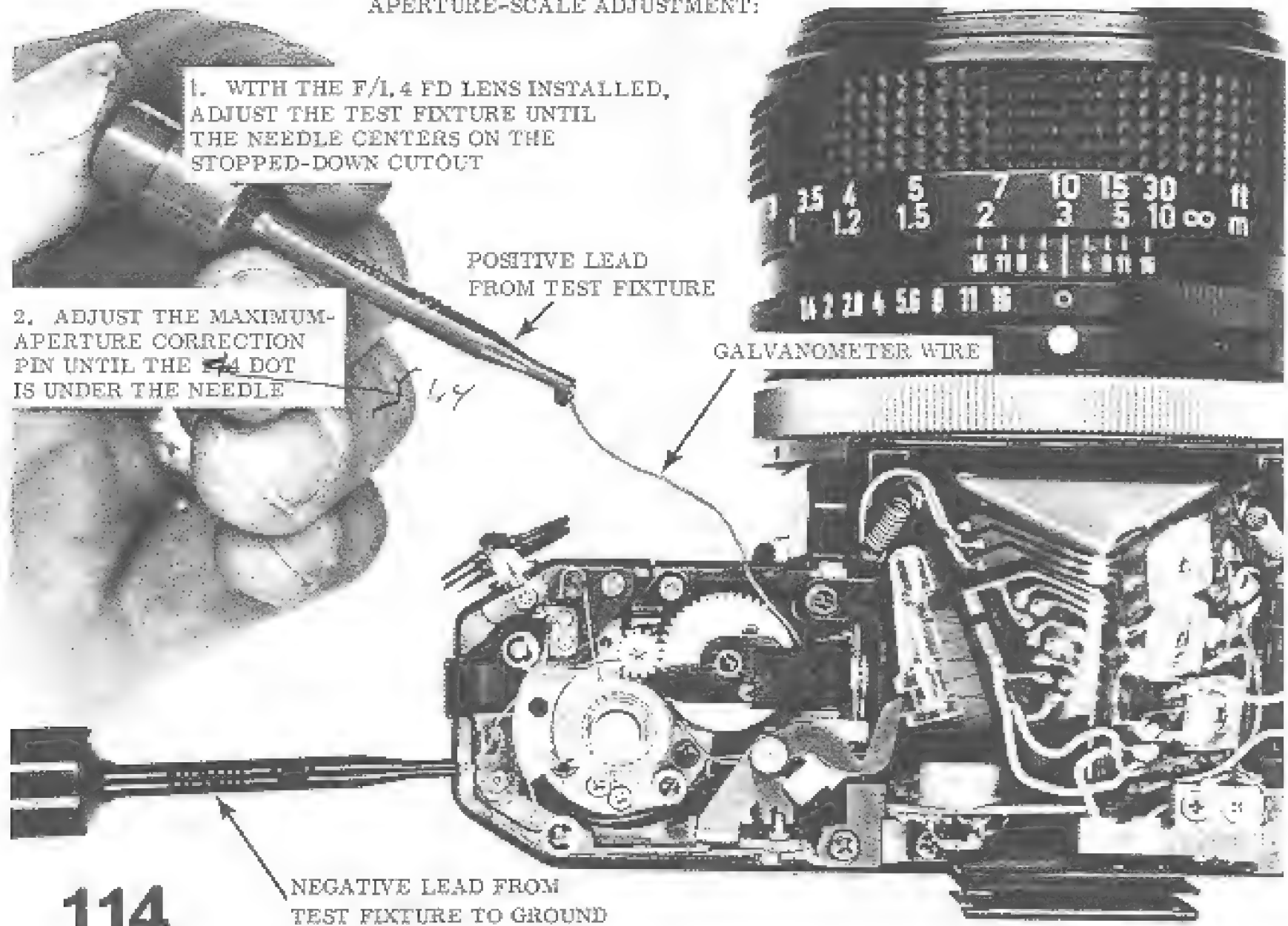


*Set at 1000*



113

# APERTURE-SCALE ADJUSTMENT:



114

1. adjust aperture scale ↑
2. " maximum aperture x position of metering sector
3. " "
4. Mount film speed gear unit
- 5 - Adjust meter
- 6 - " Cds circuit
- 7 - " Diaphragm opening



Scale moves  
down when  
you turn pin  
clockwise

# MAXIMUM-APERTURE ADJUSTMENT:

WITH F/2.8 FD LENS INSTALLED,  
MAXIMUM-APERTURE CORRECTION  
LEVER SHOULD JUST TOUCH  
CORD-CONTROL LEVER -- MAXIMUM-  
APERTURE CORRECTION LEVER MOVES  
AWAY FROM CORD-CONTROL LEVER  
WHEN YOU INSTALL F/1.4 FD LENS  
(AS SHOWN); MAKE ADJUSTMENT WITH  
ECCENTRIC.

MAXIMUM-APERTURE  
CORRECTION LEVER

ECCENTRIC

CORD-CONTROL LEVER

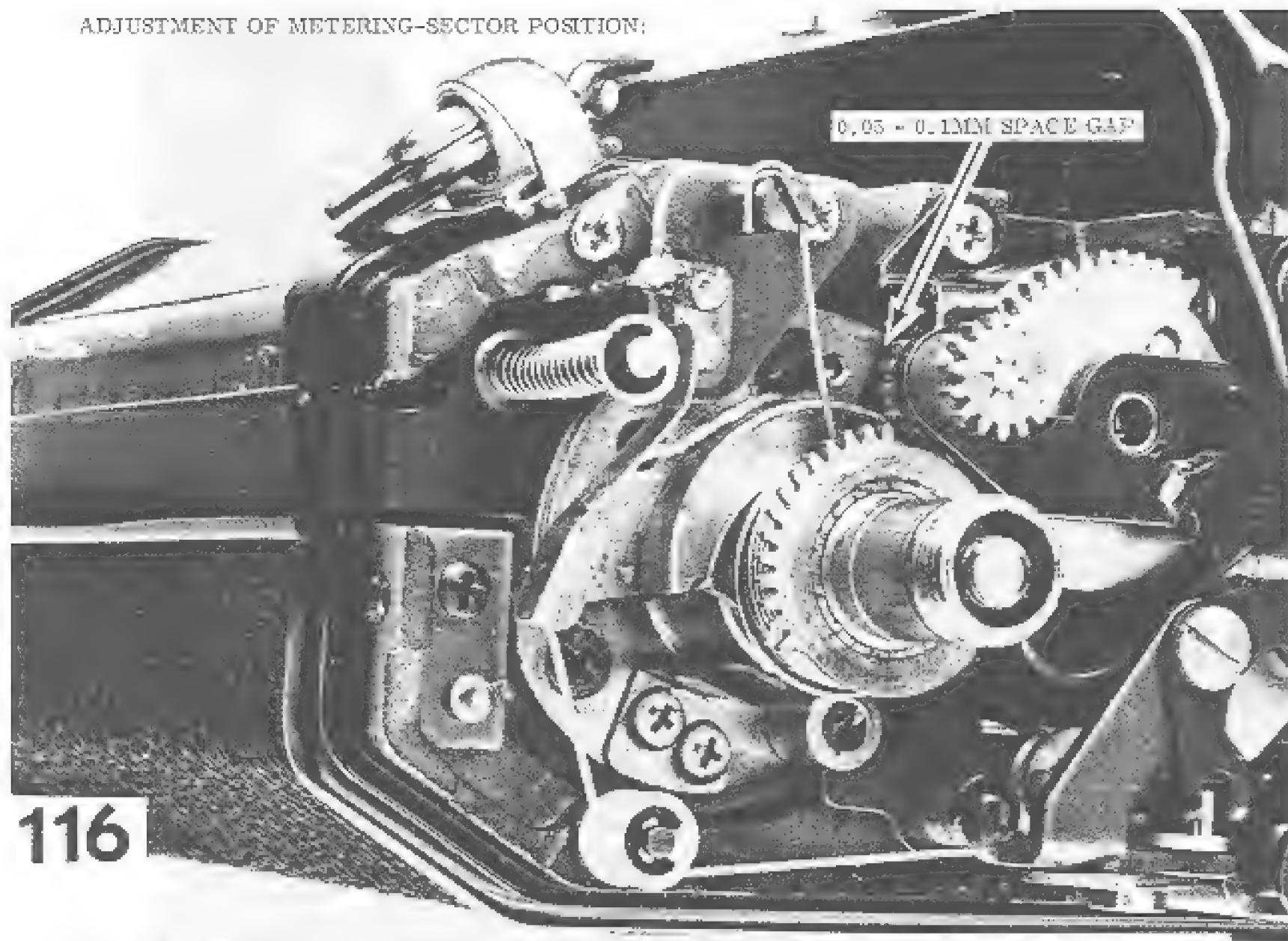
115

*adjust maximum aperture*

*lens on sub for 2.8 lens*

*lens off*

ADJUSTMENT OF METERING-SECTOR POSITION:



WITH THE SHUTTER SET TO "BULB," ADJUST THE POSITION OF THE METERING SECTOR WITH THE COUPLING CORD

*adjust position of metering sector*

117

SHUTTER-SPEED SETTING: 1/60 SECOND

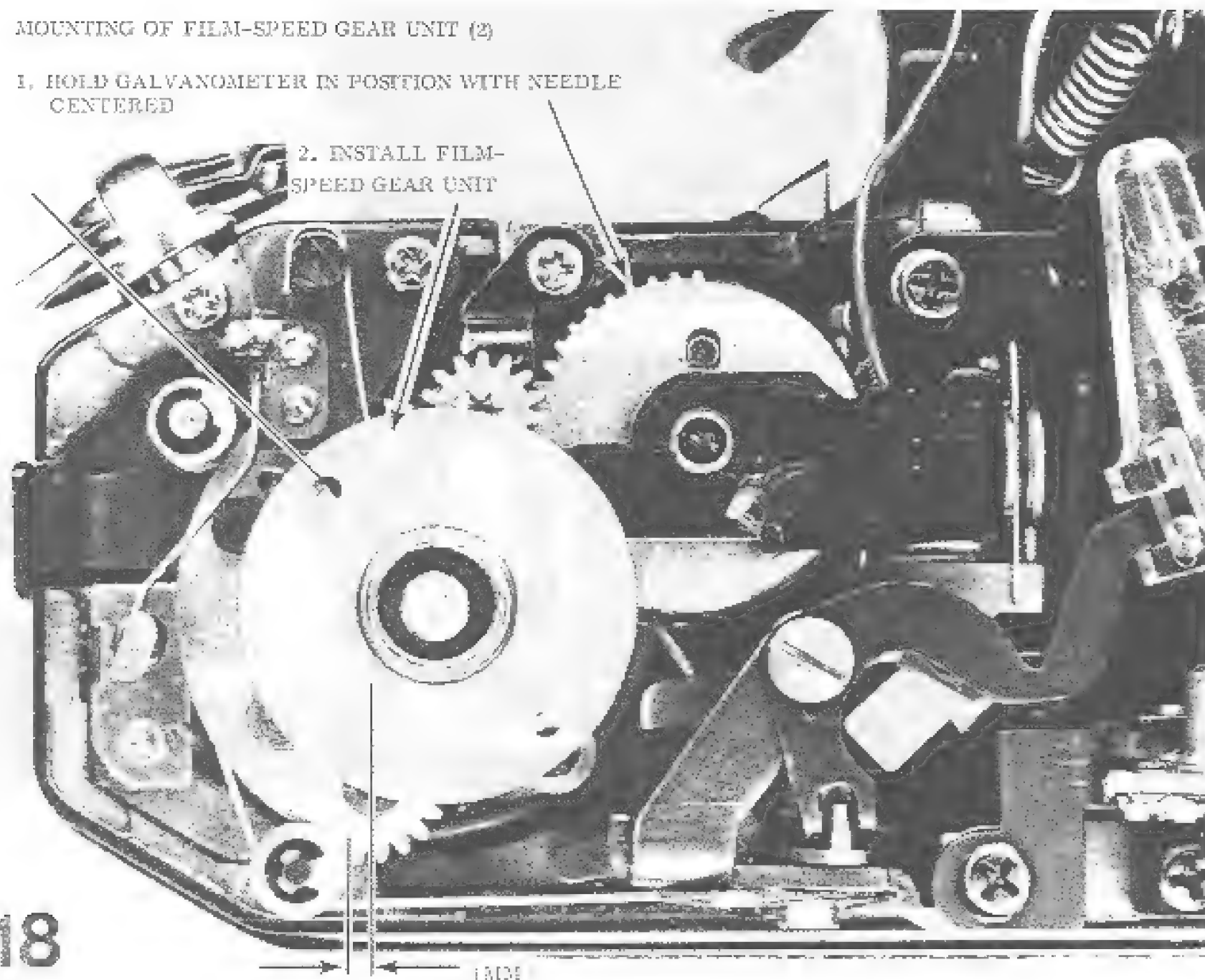
Mount film speed gear switch



# MOUNTING OF FILM-SPEED GEAR UNIT (2)

1. HOLD GALVANOMETER IN POSITION WITH NEEDLE CENTERED

2. INSTALL FILM-SPEED GEAR UNIT



118

1/16"

Mount film speed gear unit

200 ft/min	13.4	12.5	12.5
200 ft/min	12.5	12.5	20 sec

# MOUNTING OF FILM-SPEED GEAR UNIT (3)

1. REPLACE FILM-SPEED COUPLER WITH TAB  
FACING FRONT OF CAMERA

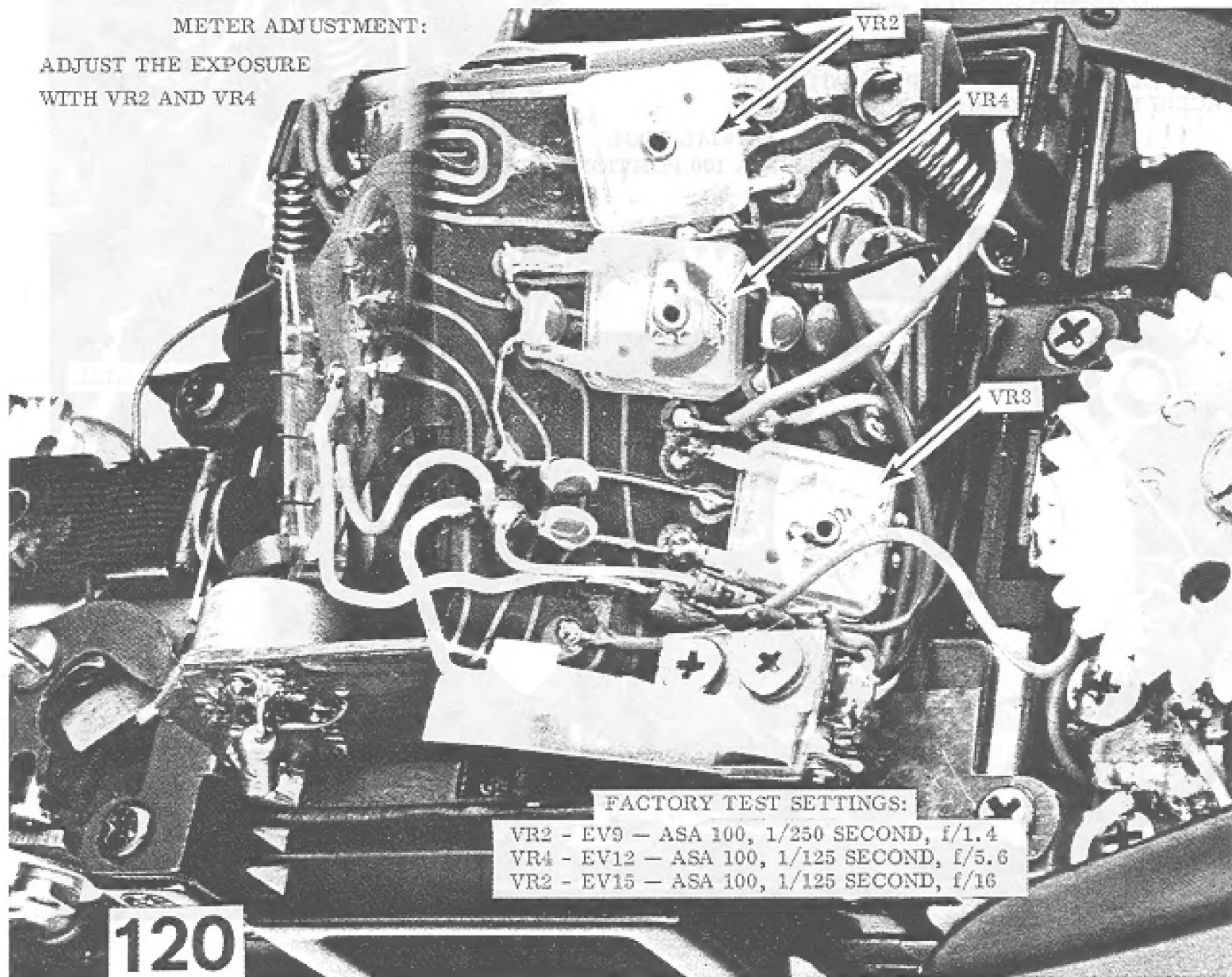
2. INSTALL SPECIAL TOOL  
TO HOLD ASA 100 POSITION

3. RESOLDER GALVANOMETER WIRE

119

*mount film speed gear unit*

METER ADJUSTMENT:  
ADJUST THE EXPOSURE  
WITH VR2 AND VR4



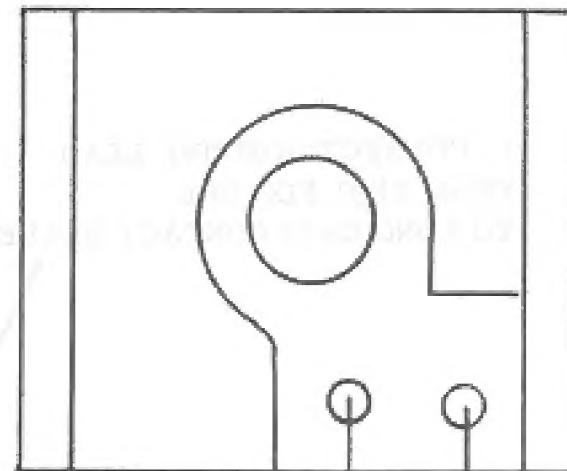
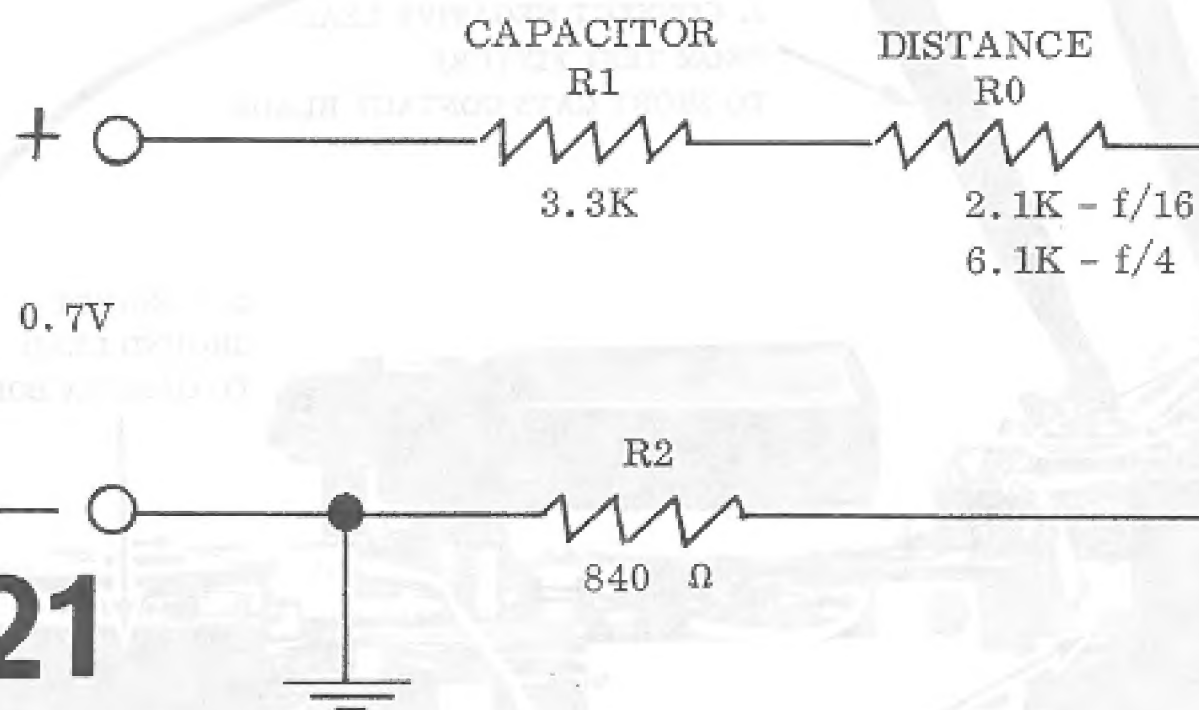
FACTORY TEST SETTINGS:

VR2 - EV9 - ASA 100, 1/250 SECOND, f/1.4  
VR4 - EV12 - ASA 100, 1/125 SECOND, f/5.6  
VR2 - EV15 - ASA 100, 1/125 SECOND, f/16

120

# EQUIVALENT CIRCUIT - SPEEDLIGHT 133D

121



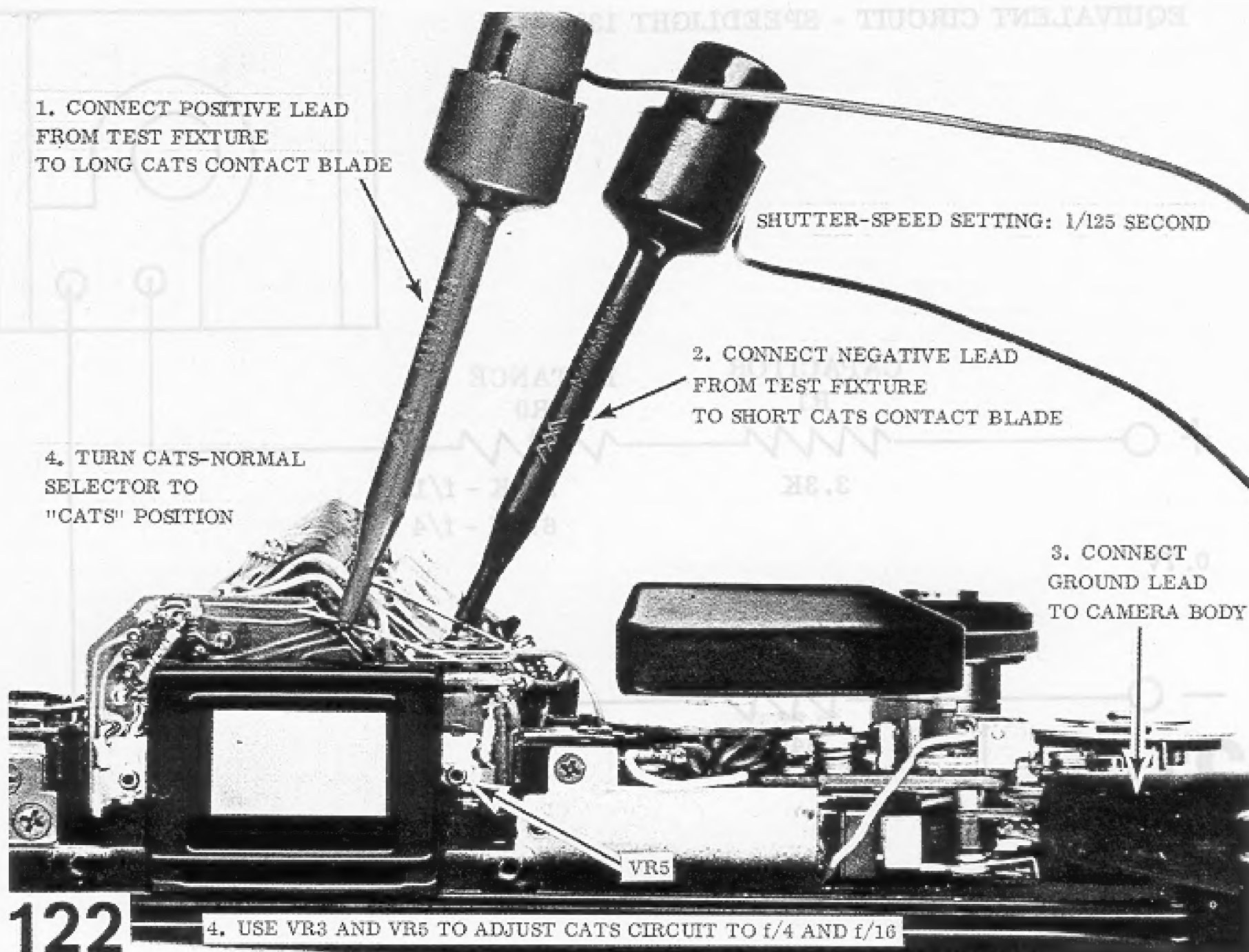
1. CONNECT POSITIVE LEAD  
FROM TEST FIXTURE  
TO LONG CATS CONTACT BLADE

SHUTTER-SPEED SETTING: 1/125 SECOND

2. CONNECT NEGATIVE LEAD  
FROM TEST FIXTURE  
TO SHORT CATS CONTACT BLADE

4. TURN CATS-NORMAL  
SELECTOR TO  
"CATS" POSITION

3. CONNECT  
GROUND LEAD  
TO CAMERA BODY



*adjust cats circuit*

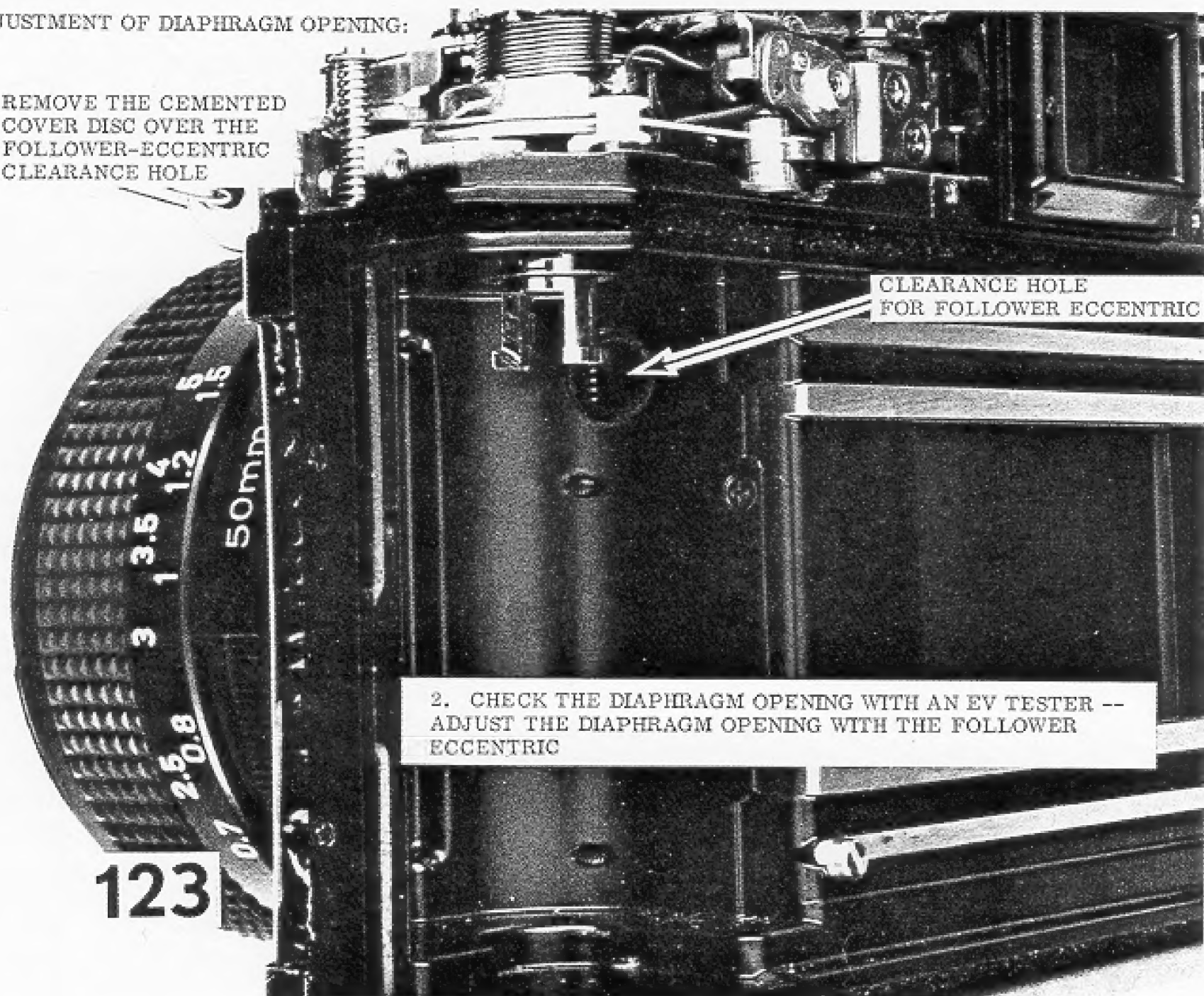
*VR3 - level adj. +4*

*VR5 - slope adj. +10*



ADJUSTMENT OF DIAPHRAGM OPENING:

1. REMOVE THE CEMENTED COVER DISC OVER THE FOLLOWER-ECCENTRIC CLEARANCE HOLE



*adjust diaphragm opening*